

WALTER IRVING.

MR. WALTER IRVING, who was elected President of the Guild for the year 1927-28, was born at Easton Park, Wickham Market, Suffolk, on August 3rd, 1867. His father was head gardener to the Duke of Hamilton, and it was under his tuition that our President received his first training in horticulture. After leaving Easton Park, he was subsequently employed at Sefton Park, Slough, and at the Grange Gardens, Old Windsor. From the latter establishment, Mr. Irving went to Messrs. Lee's Nursery, at Hammersmith, where he remained for about a year, proceeding later to the gardens at Belvoir Castle, where for three years he worked under the able direction of Mr. William Ingram, who imparted much of his knowledge of hardy plants to him. In October, 1890, Mr. Irving came to Kew, and in March, 1893, he was appointed to the charge of the Herbaceous and Alpine Department, in succession to Mr. Daniel Dewar. In June, 1922, a change in nominal status, gave him the rank of Assistant Curator.

During such a long period of service at Kew, Mr. Irving has acquired an extensive knowledge of the British Flora, and his assistance to Members of the British Botany Club is well-known, and has often called forth appreciative remarks from those connected with this Society in their Reports, which are published annually within the pages of the *Kew Guild Journal*.

Under Mr. Irving's guidance, the Rock Garden at Kew was entirely rebuilt, and in its present form, is the Mecca of many thousands of visitors to the Royal Botanic Gardens, Kew, more especially during the spring and summer months of the year.

Mr. Irving is the author of several interesting and instructive volumes, among which may be mentioned: "The Book of Unheated Greenhouses"; "Saxifrages"; and "Rock Gardening," while in addition he is a very frequent contributor to the horticultural press.

Among Mr. Irving's hobbies may be included photography; and of later years, he has become the possessor of a first-class wireless receiving set, and is able to enjoy many pleasant hours of relaxation from this source.

To those who know him best, Mr. Irving is of a very modest, retiring disposition, though he is always willing to place his extensive knowledge, gained as the result of his lifetime's work among hardy plants, at the service of others. His sterling qualities have endeared him to a wide circle of horticultural friends, in addition to the many who have known and served under his able guidance while at Kew.

E.G.D.

BALANCE SHEET.—YEAR ENDING 30TH APRIL, 1927.

RECEIPTS.		EXPENDITURE.	
	£ s. d.		£ s. d.
Balance from 1925-26 A/c....	*163 14 8	Subscription to Royal Gardeners' Orphan Fund ...	1 1 0
Life Subscriptions ...	14 17 0	Subscriptions to Gardeners' Royal Benevolent Institution... ..	1 1 0
Annual Subscriptions—		Printing — 1926 Journal ...	96 18 10
Arrears up to and including 1925	3 18 6	— Sundries ...	1 6 0
Subscriptions for 1926 ...	13 11 6	Expenses incurred in connection with the purchase of £50 5% L.C.C. Stock, (Matilda Smith Memorial Prize Fund)	1 5 6
" " 1927 ...	5 0 6	Honorarium to Secretary and Editor	10 0 0
" " 1928-32 ...	12 6	Postages—Secretary (including postage of Journals for 1926 and 1927) ...	13 9 6
Special Sales of the Journal..	17 6	Postages—Treasurer... ..	9 0
Dividend on £300 New South Wales Stock	12 0 0	Balance	*170 3 9
Dividend on £26 6s. 3d. 5% War Stock	1 6 2		
Interest on Deposits in Post Office Savings Bank ...	3 10 1		
Advertisements in 1926 issue of the Journal	54 2 6		
Advertisements in 1927 issue of the Journal	17 17 6		
Sale of 4 half-tone electros...	4 6 2		
	<u>£295 14 7</u>		<u>£295 14 7</u>

*Includes Balance of War Memorial Fund, £29 Os. 6d.

CAPITAL ACCOUNT, as on the 30th April, 1927.

LIABILITIES.		ASSETS.	
	£ s. d.		£ s. d.
Thomson Bequest	92 8 6	£300 New South Wales 5% Stock, (1935-1955) ...	300 0 0
247 Life Subscribers of £1, at two-thirds rate ...	164 13 4	£26 6s. 3d. 5% War Stock (1929-1947)	26 6 3
187 Life Subscribers of £2, at two-thirds rate ...	249 6 8	*1014 Journals	10 0 0
Balance of Assets	15 15 6	100 Journals (1927 issue), calculated at half-value ...	6 5 0
	<u>£522 4 0</u>	Balance at Bank and in Cash	170 3 9
		Value of Typewriter, after allowing for depreciation.	9 9 0
			<u>£522 4 0</u>

* Face value written down.

BENEVOLENT FUND.

BALANCE SHEET, Year ending 30th April, 1927.

RECEIPTS.		EXPENDITURE.	
	£ s. d.		£ s. d.
Balance from 1925-26 A/c...	14 6 3	Balance	15 14 3
Subscriptions	1 1 0		
Bank Interest	7 0		
	<u>£15 14 3</u>		<u>£15 14 3</u>

CAPITAL ACCOUNT, as on the 30th April, 1927.

LIABILITIES.		ASSETS.	
	£ s. d.		£ s. d.
Balance of Assets	22 14 3	Balance at Bank	15 14 3
	<u>£22 14 3</u>	Loan to Member	7 0 0
			<u>£22 14 3</u>

DÜMMER MEMORIAL FUND.

BALANCE SHEET, Year ending 30th April, 1927.

RECEIPTS.		EXPENDITURE.	
	£ s. d.		£ s. d.
Dividend on 4% Funding Loan	2 16 0	Presentation Volumes for best collection British Botany Club, 1925 ...	2 2 0
		Printing—Presentation Slips	10 6
		Balance	3 6
	<u>£2 16 0</u>		<u>£2 16 0</u>

CAPITAL ACCOUNT, as on the 30th April, 1927.

LIABILITIES.		ASSETS.	
	£ s. d.		£ s. d.
Balance of Assets	61 1 6	Value of £70 Stock, 4% Funding Loan	60 18 0
		Balance at Bank	3 6
	<u>£61 1 6</u>		<u>£61 1 6</u>

EDUCATIONAL FUND.

BALANCE SHEET, Year ending 30th April, 1927.

RECEIPTS.		EXPENDITURE.	
	£ s. d.		£ s. d.
Balance from 1925-1926 A/c. *112 1 4		Balance at Bank *123 9 10	
Donations	7 3 6		
Bank Interest	4 5 0		
	<u>£123 9 10</u>		<u>£123 9 10</u>

*Includes Balance of £8 7s. 10d.—William Watson Memorial Fund.

MATILDA SMITH MEMORIAL PRIZE FUND.

BALANCE SHEET, Year ending 30th April, 1927.

RECEIPTS.		EXPENDITURE.	
	£ s. d.		£ s. d.
Bequest	50 0 0	Purchase of £50 L.C.C. 5% Consolidated Stock (1940-1960)	51 5 6
Sum allocated from Kew Guild General A/c. ...	1 5 6		
	<u>£51 5 6</u>		<u>£51 5 6</u>

CAPITAL ACCOUNT, as on the 30th April, 1927.

LIABILITIES.		ASSETS.	
	£ s. d.		£ s. d.
Balance of Assets	50 0 0	Value (at par) £50 L.C.C. 5% Consolidated Stock (1940-1960)	50 0 0
	<u>£50 0 0</u>		<u>£50 0 0</u>

The foregoing Accounts have been Audited and found correct—

R. F. WILLIAMS, Hon Treasurer.
E. G. DUNK, Secretary.

CHAS. H. CURTIS }
S. A. SKAN } Hon. Auditors.

6TH MAY, 1927.

ANNUAL GENERAL MEETING,

THE Annual General Meeting of the Guild was held at the Clarendon Restaurant, Hammersmith, W.6., on May 26th, 1927, at 6-15 p.m. The retiring President, MR. R. L. HARROW, occupied the Chair, and about 80 members of the Guild were present.

The Minutes of the Annual General Meeting, of July 31st, 1926, held at Kew owing to the industrial crisis of that year, having been published in the 1927 issue of the *Journal*, it was unanimously resolved, on the motion of the Chairman, that they should be taken as read.

The Annual Report and Balance Sheet for the year ended April 30th, 1927, copies of which were circulated to members were read by the Secretary, MR. E. G. DUNK. MR. G. T. LANE moved that the Report and Balance Sheet be passed, and congratulated the Guild on its financial position; MR. A. E. BRAYBON seconded the resolution, which was agreed to by all present.

After much discussion, it was moved by MR. G. T. LANE, "That the Watson Memorial Fund and the Kew Guild Educational Fund should be invested as a joint Fund, to be known as the Kew Guild Watson Memorial Educational Fund, and the capital thus available should be invested in Trustee Stock, as a fitting memorial to the memory of the late Mr. William Watson, A.L.S., V.M.H." MR. COURTS expressed his disappointment at the poor support that the Educational Fund had received from the vast majority of the Guild members, but was of the opinion that some slight assistance might be given from the interest which would accrue annually, even if this would only enable students to purchase books, etc. MISS L. H. JOSHUA and MR. A. D. COTTON supported MR. LANE'S proposal, and the Chairman put the resolution to the Meeting. The motion was agreed to, with a few dissentients. MR. R. F. WILLIAMS, the Hon. Treasurer, moved that the Fund should be invested in 5% War Loan Stock; and MR. W. HALES seconded the proposal, which was approved of by the Meeting.

MR. HALES as Chairman of the Committee, referred to the distressed circumstances of Mr. Alfred James Hayter, who was at Kew from 1866-69, and asked that the Meeting should approve of the grant of 5/- per week to this aged Kewite, from the Benevolent Fund. He brought to the notice of the Members present the low state of the Benevolent Fund, but expressed the opinion that the necessary money would be readily forthcoming. MR. DALLIMORE suggested that the occasion was opportune for the balance of the War Memorial Fund to be taken from the General Fund and invested with the Benevolent Fund. MR. G. T. LANE supported this proposal, which was unanimously agreed to. MR. HALES'S suggestion was warmly approved of by all present and it was intimated that a collection for the Fund would be made during the course of the evening.

MR. G. T. LANE, supported by MR. A. HOSKING, moved the adoption of MR. WALTER IRVING as President of the Guild for the ensuing year. This proposal was agreed to with acclamation.

A vote of thanks to MR. R. L. HARROW concluded the Meeting, at 7-15 p.m.

THE KEW GUILD DINNER, 1927.

THE Clarendon Restaurant, Hammersmith, W., was the venue for the Kew Guild Dinner, on Thursday, May 26th, 1927, when the President, Mr. Walter Irving, presided over an attendance of 120 members. An excellent dinner was served, and it was generally agreed that the arrangements were a decided improvement on former years. Toasts were commendably few and allowed more time for social intercourse.

The Loyal Toast having been duly honoured, the President then rose to propose the toast of "The Kew Guild." "During the time I spent at Kew," continued Mr. Irving, "a period covering nearly 37 years, I have seen many changes, including three different Directors and three Curators; and many men have come and gone. I have heard many speeches at these Annual Dinners; some long, and others short and to the point, while, on occasions, the President could not be persuaded to make a speech at all. Dislike of public speaking and lack of eloquence prevents me from making a speech in any way worthy of this auspicious occasion; however, speeches are not the primary object of these enjoyable gatherings, so this year they have been cut down to a minimum, giving more time in which to renew old friendships and to make new ones.

"We are all aware of the objects of the Guild, which are to further the interests of Kew men in all parts of the world, and to form a link in binding past and present members in one brotherhood, so I will not enlarge on this subject.

"I may say how pleased I am to see so many members gathered here from all parts of these islands, as well as from overseas, the latter enjoying well-earned rest from their work in upholding the traditions of Kew in the Colonies and elsewhere. Among these, I may mention, Messrs. A. E. Braybon, W. Head, G. H. Cave (from India), Mr. T. W. Wiltshire (from the Sudan), Mr. J. W. Sparrow (from the Gambia), Mr. W. Fishlock (from West Africa), and Messrs. R. A. Paton and W. J. M. Cunningham (from Nigeria).

"On behalf of the Guild, I extend a very hearty welcome to our Guest of the evening, Mr. T. Hay, Superintendent of Hyde Park. He is an enthusiastic plant-lover and has been the means of re-introducing many plants that had been lost to cultivation. Kew and Kewites generally are indebted to him for many things.

"Among letters of regret at non-attendance is one from Dr. A. W. Hill, whose duties have taken him to Paris.

"With these brief remarks I give the toast of 'The Kew Guild,' coupling with it the name of our retiring President, Mr. R. L. Harrow, Curator of the Royal Botanic Garden, Edinburgh."

After some persuasion, Mr. Hay was induced to make a few remarks, during the course of which he said how much he appreciated being invited to attend the gathering as Guest of the Kew Guild. Kew and Kew-trained men had always a warm place in his affections and he was always anxious to do all that was in his power to further the interests of Kew as an Institution and those who passed through their training in the world of horticulture within its boundaries.

During the course of the evening an appeal was made by the Secretary of the Guild, on behalf of Mr. Alfred James Hayter, who, as stated at the Annual General Meeting, was in very necessitous circumstances. As a result of this appeal it was later announced that a sum of £14 had been raised, which would be placed to the credit of the Benevolent Fund, from which a weekly grant of 5s. would be made to this old Kewite.

The interlude was somewhat longer than usual and permitted members to fraternise more freely, and it was generally agreed that this prolongation was a very desirable addition to the evening's programme.

Following the interval, Mr. R. L. Harrow addressed the gathering in proposing the toast, "Our President." He remarked on the progress that Kewites generally had made in the world of horticulture, and how not a few of those who were present at the Dinner owed their present knowledge to the instruction they had received in their early days at Kew under the direction of Mr. Irving. His genial disposition and his desire to be of assistance to those seeking his advice was a singular trait in his character, and it gave many who had known Mr. Irving, not only from their association with him while at Kew, but in other spheres of the horticultural world, much pleasure to see him thus honoured by Kew and the Kew Guild.

During the course of the evening, Miss L. C. Burrell and Mr. L. J. Harding entertained the company with their songs, ably assisted by Mr. D. Saville as accompanist.

A vote of thanks to those who had thus contributed to the success of the evening concluded a very pleasant evening.

Among those present were :—

MRS. N. L. ALCOCK.	G. W. FORD	J. G. MURRAY.
B. W. ALLISON	T. C. FORSYTH.	J. C. NAUEN.
A. F. BAKER.	B. GILL	W. NELMES
F. S. BANFIELD	E. GODSEFF	O. B. ORCHARD
E. W. BASSETT	L. GODSEFF	MRS. A. OSBORN
E. H. BEATTY	W. HALES	A. OSBORN
J. W. BESANT	D. HALKERSTON	R. A. PATON
J. W. BINTNER AND GUEST	B. HARBORNE	F. G. PRESTON
J. W. BIRKENSTALL	L. HARDING	C. P. RAFILL
D. BLISS	J. E. HARRIS	L. P. RICHARDSON
T. D. BOYD	R. L. HARROW	S. J. ROBERTS
A. E. BRAYBON	MISS V. H. HARVEY	J. W. ROBBIE
W. H. BROMLEY	A. HARWOOD	MISS O. RUDOLF
J. BROWN	T. HAY	L. RUSE
MISS L. C. BURRELL	(Guest of Kew Guild).	G. M. RYAN
G. CATT	W. HEAD	D. SAVILLE
G. H. CAVE	A. G. HOPKINS	W. S. SHARP
A. J. W. CHEEK	D. HORTON	MRS. F. S. SILLITOE
MAJOR T. F. CHIPP	MRS. E. HORTON	F. S. SILLITOE
J. S. CHRISTIE	E. HORTON	S. A. SKAN
P. W. CONN	W. IRVING(President)	F. W. SMITH
L. COOK	J. D. JONES	MRS. J. W. SPARROW
MRS. E. C. W. COOPER	H. G. KING	J. W. SPARROW
E. C. W. COOPER	F. P. KNIGHT	H. SPOONER
MRS. A. D. COTTON	G. LAMB	L. STENNING
A. D. COTTON	W. LAMBERTON	C. R. STOCK
F. G. COUSINS	G. T. LANE	T. W. TAYLOR
J. COUTTS	W. L. LAVENDER	W. E. TREVITHICK
W. FISHLOCK	J. W. LOCK	W. H. TUCK
MRS. W. DALLIMORE	F. J. LONGMIRE	C. B. USSHER
W. DALLIMORE	C. E. E. LUFF	J. WEATHERS
MISS H. W. DAVIDSON	C. MCGREGOR	MRS. A. C. WHIPPS
R. DERRY	F. C. MACK	A. C. WHIPPS
MRS. E. G. DUNK	S. J. MACKENZIE	R. F. WILLIAMS
E. G. DUNK	H. F. MACMILLAN	E. V. WILLOUGHBY
J. W. ENGLAND	J. T. MARKS	MISS N. WILTSHIRE
T. H. EVERETT	MRS. H. MAW	J. WILTSHIRE
W. EVERITT	H. MAW	J. W. WRIGHT
MRS. J. W. M. CUNNINGHAM	A. HOSKING	W. H. YOUNG
J. W. M. CUNNINGHAM		

MUTUAL IMPROVEMENT SOCIETY.

SESSION 1926-27.

THE ANNUAL GENERAL MEETING was held in the Library, on September 6th, 1926, for the election of Officers. MESSRS. COUTTS and TAYLOR were unanimously re-elected Chairman and Vice-Chairman respectively. MR. F. P. KNIGHT was elected Secretary, and MR. E. V. WILLOUGHBY, Assistant Secretary; with MESSRS. W. FRANKLIN, G. FORD, and T. D. BOYD on the Executive Committee. MR. FRANKLIN left shortly afterwards to fill a post at Cambridge; and MR. F. THORNS was elected to fill the vacancy thus caused.

Nineteen meetings were held during the session, with an average attendance of 25 members; this, unfortunately, compares unfavourably with former years, and it is to be regretted that a gradual falling-off in attendance has been evident since 1923.

The Society is indebted to the Director for his interesting talk on "Gardening in America," and to Miss Wakefield, the Assistant Director, and Messrs. Taylor and Osborn for their help in adding variety to the syllabus by giving lantern lectures.

Fourteen papers on Horticultural subjects were contributed by Sub-Foremen and Student Gardeners, and one question night was arranged.

The papers throughout were of an extremely high standard and showed forethought and care in preparation, with an intimate and often specialized knowledge on the part of the writers of the subjects in hand. The average number of members taking an active part in the discussions was 12, an improvement on the previous session, which was then 8.5.

One or two letters received during the session from Old Kewites referring to their indebtedness to the "Mutual," were read to the Society.

The Hooker Memorial Prize, presented by the Director, was awarded to Mr. F. P. Knight, and the Society's Prize to Mr. E. V. Willoughby.

The Society is extremely fortunate in having as its Chairman Mr. J. Courts; records available show this as his 15th consecutive session in office. His wide knowledge and experience concerning horticultural matters are always a source of great help to the members both at the weekly meetings and during their ordinary routine work.

Two Summer Outings were arranged: to Hyde Park, where we were conducted through the Propagating Department, by Mr. T. Hay; and to the establishment of Messrs. James Carter and Co., at Raynes Park. Both these excursions were very enjoyable, and it is hoped that the insight thus gained into the working of such establishments will prove of great value to those who participated in them.

F. P. KNIGHT (1927).

SYLLABUS.

1926.

Oct.	11	*The Work of Botanic Gardens	-	Major T. F. Chipp, B.Sc., Ph.D.
"	18	Lawns and Sports Grounds	- -	Mr. W. Ibbett.
"	25	Decorative Foliage Plants	- -	Mr. A. E. Wise.
Nov.	1	Question Night		
"	8	The Culture of Carnations	- -	Mr. J. Lawson.
"	15	Greenhouse Plants	- - -	Mr. V. G. Barham.
"	22	*Gardens of the Riviera	- -	Mr. T. W. Taylor.
"	29	Weeds	- - - -	Mr. W. Nelmes.
Dec.	6	Some Rare Alpines	- - -	Mr. J. G. Grant.
"	13	The Culture of Vegetables	- -	Mr. L. Cook.
"	20	Gardeners and Gardening	- -	Mr. F. W. Thorns.

1927.

Jan.	10	Gardening in America	- - -	Dr. A. W. Hill, F.R.S., etc.
"	17	The Forcing of Hardy Shrubs	-	Mr. W. Everitt.
"	24	The Propagation of Hardy Fruits		Mr. H. F. Mayne.
"	31	Rock Gardening for Everyone	-	Mr. J. Farmer.
Feb.	7	Some Common Fungi	- - -	Miss E. Wakefield, M.A.
"	14	Rhododendrons	- - -	Mr. M. Goldsmith.
"	21	Some Oriental Trees and Shrubs	-	Mr. L. C. Hendon.
"	28	Indoor Primulas	- - -	Mr. E. W. Studley.
Mar.	7	*The Pruning of Shrubs	- -	Mr. A. Osborn.
		Secretary's Report.		

* Lantern Lecture.

BRITISH BOTANY CLUB REPORT

1927.

In spite of a wet season, excellent collections of plants were made. Fortunately most of the evenings selected for excursions were fine and, with one exception (Guildford), this held true for the longer trips.

Two half-day trips—those to Burnham Beeches and to Guildford—were carried out as in previous years; but those to Gravesend and Windsor were dropped. A full day was granted instead of these two half-days, when, under Mr. Turrill's able leadership, ten of the Club members went to Milford-on-Sea. A good many maritime plants were collected there, with a high percentage of rare or local species. The trip was made by motor-coach and proved quite enjoyable.

The members experienced difficulty in drying their specimens, due to the general dampness and lack of sunshine; nevertheless, splendid collections were sent in for examination.

The two best collections were made by Mr. Findlay and Mr. Shambrook. These shared first place. Both were excellent in every respect, and I understand an additional prize will be awarded this year. Representatives of ninety-nine families (the highest number possible) were submitted by Mr. Findlay, which testified to his collecting zeal. Mr. Rutter, Mr. Everitt, and Mr. Studley, in order of merit, come next on the list.

The thanks of the Club are extended to all those who have given their services and time, and especially to Mr. Irving, who has again contributed largely to its success.

January 26th, 1928.

W. NELMES, *Hon. Secretary.*

THE SWIMMING CLUB, 1927.—The Annual General Meeting was held on April 4th, when the following members were elected to hold office for the season: Mr. F. W. Thorns, Honorary Secretary; Mr. M. C. Goldsmith, Captain; Mr. F. A. Barham, Vice-Captain; Messrs. A. J. Cheek and R. C. McMillan, Committee.

The past season will not go down in the Club's history as one of the most successful, although some enjoyable evenings were spent by members at the Richmond Public Baths. Practice nights here were well-attended, but owing to prolonged wet and cold weather only a few of the hardier spirits ventured into the Thames.

Only three entries were forthcoming for the Mile Championship Race, which was decided on the evening of August 26th. These were Messrs. Bruins-Lich, Barham and Goldsmith.

Dr. Hill and Mr. Coutts officiated as Umpires, and Corporal Sealy as starter and timekeeper. The evening was fine, but it is doubtful if the race was ever decided in colder water.

Mr. Bruins-Lich took the lead from the start, at Brentford, but before the half-way was reached, was passed by Mr. Goldsmith, who went on to win for the second year in succession.

The winner's time was seventeen minutes. Mr. Barham came in second, with eighteen minutes, whilst Mr. Bruins-Lich was forced to retire.

As usual, the race was followed by a Flannel Dance, in Kew Pavilion, where Dr. Hill presented the Silver Challenge Cup to the winner.

FRANK W. THORNS, *Hon. Secretary.*

THE CRICKET CLUB, 1927.—The Annual General Meeting of the Club was held on April 6th, 1927, when the following members were elected to hold office for the season:—Mr. H. H. Jarman (Hon. Secretary), Mr. S. J. Roberts (Captain), Mr. C. F. Coates (Vice-Captain), Messrs. C. McGregor and E. V. Willoughby (members of the Committee).

A fixture list of 21 matches was arranged, of which 4 were scratched, owing to the inclement weather which prevailed during the season. The heavy rains oft-times rendered play very difficult and soft wickets were the general order when the weather was on its best behaviour during the summer of 1927. Of the remaining 17 matches, 8 were won, 8 lost, and one match remained drawn. Though to all appearances the results were not up to the standard of the previous season, the club generally played quite up to its usual form.

As in former years, the match *versus* the Staff was played on Kew Green, in the early part of June, and was as popular an event as ever, though the Staff were easily victorious, and Mr. Hutchinson is to be congratulated on putting such a strong batting side into the field. Briefly, the story of the game is as follows:—Losing the toss, we were set to field in the blazing sun (and, it should be noted that this was the only match in which King Sol really did his best during the whole season; such was 1927!), and the Staff treated our bowling with contempt, and soon ran up the unusual figure (for these matches) of 132 runs. The chief scorers were Messrs. Hill, 42; Trevithick, 38; and Pateman, 28. At the close of this innings we were cordially invited by the Director to tea on the Lawn Tennis Ground, where Miss Hill was our genial hostess. After partaking of a variety of good things (though whether too well, we afterwards wondered!), we had hopes of another victory, as in former years. Only Mr. G. W. J. Ford came up to expectations, and withstood the bowlers, and compiled the useful total of 22 runs. The sorry performance of the other

members of the team can be better judged when it is recorded that the Student-Gardeners' innings closed for 54 runs.

Shortly after this match, we had the misfortune to lose Mr. G. Ford's services; we can only hope that our loss will be his gain, though, doubtless, foreign fields will yet witness his prowess in the cricket field. Those who know him best will miss him for himself, to say nothing of his bowling and batting, for he was a keen and ardent follower of the fortunes of the Club from the day he came to Kew to the day he left for the United States of America.

Space does not permit of a full description of all the fixtures, but the matches with Clivedon and Cambridge Botanics were notable for the splendid performances of the Kew batting. After dismissing Clivedon for 87 runs, we made rather a weak start until Messrs. S. J. Roberts and J. Farmer became associated and altered the whole aspect of the match. By the time the Kew eleven were dismissed, Roberts had scored 65 runs, and Farmer 35. It was worth the trip to Clivedon to take part in such an enjoyable match. Cambridge Botanics visited Kew, on Saturday, July 31st, this being a return match, Kew having visited Cambridge during the previous season. The visitors were led by two old Kewites, Messrs. F. G. Preston (Captain) and W. Franklin. Cambridge batted first, and found the bowling of Messrs. W. Taylor and C. Pateman rather deadly, and were dismissed for but 34 runs. Kew, however, fared but little better and were fortunate enough to gain the victory by the narrow margin of 6 runs. Other matches in which Kew were successful, and, it is of interest to note, all were away fixtures, were: *versus* the 6th Richmond Scouts; The John Innes Horticultural Institution (who were also defeated in the return match, at Kew), The Ministry of Labour, and the Kew 2nd. Eleven. Our losses included those *versus* St. Luke's, the Victoria Working Men's Club, while Aldenham were successful in both matches during the season. The remaining match, *versus* St. Luke's, which was played on Kew Green, was drawn.

The chief batting honours were gained by the following:—J. Farmer, 139 runs, averaging 15.44 per match; E. V. Willoughby, 136 runs, averaging 12.36 per match; and S. J. Roberts, 131 runs, averaging 10.7 runs per match.

The premier bowling honours were gained by W. Taylor, who secured 40 wickets at an average of 4.7 runs; G. Stedman, 17 wickets at an average of 5.5 runs; and H. H. Jarman, who secured 19 wickets at an average of 7.55 runs per wicket.

The Members of the Club wish their appreciation to be recorded of the continued support that is accorded the Club, both financially and otherwise, by the many friends among the Staff of the Gardens.

H. H. JARMAN, *Hon. Secretary.*

LECTURES, 1927.

Plant Pathology. (*Fungi*). Lecturer, Mr. A. D. Cotton, F.L.S. 25 Lectures. Maximum marks, 250. Highest aggregates: A. E. Wise, 244; W. E. Bassett, 232; T. H. Everett, 231.

Soils and Manures. Lecturer, Mr. F. Crowther, A.R.C.S. 10 Lectures. Maximum marks, 100. Highest aggregates: V. G. Barham, 94; T. H. Everett, 94; C. R. Stock, 87; W. C. Ibbett, 85; C. McGregor, 85.

Advanced Systematic Botany. Lecturer, Mr. C. H. Wright, A.L.S. 25 Lectures. Maximum marks, 100. Highest aggregates: V. G. Barham, 98; J. W. England, 88; F. Richards, 84.

General Botany. Lecturer, Mr. T. A. Sprague, B.Sc., F.L.S. 36 Lectures. Maximum marks, 320. Highest aggregates: L. Cook, 317; W. Everitt, 317; J. Lawson, 310; W. E. Stewart, 301.

Systematic Botany and Ecology. Lecturer, Mr. W. B. Turrill, M.Sc., F.L.S. 12 Lectures. Maximum marks, 100. Highest aggregates: H. F. Davies, 99; C. E. W. Shambrook, 97; W. Everitt, 96.

Geology and Soils. Lecturer, Dr. H. H. Thomas. 10 Lectures. Maximum marks, 100. Highest aggregates: H. F. Davies, 95; F. W. Thorns, 95; D. E. Horton, 90; W. E. Stewart, 90; E. W. Studley, 90; W. Everitt, 85; L. C. Hendon, 85; K. McCready, 85; W. G. Rutter, 85.

Economic Botany. Lecturer, Mr. W. Dallimore. 20 Lectures and Demonstrations. Maximum marks, 150. Highest aggregates: W. C. Ibbett, 142; W. Nelmes, 141; C. McGregor, 137; J. Robbie, 137.

THE KEW LECTURERS.

We commence the list with T. A. SPRAGUE, whom first-year men know well;

He deals with General Botany—the structure of the cell,
Modes of reproduction; then, to find which man is best,
As a *grand finale* to the course, he holds a “little test.”

Then, secondly, comes DR. HAAS, of rather portly frame,
Both past and present Kewites will e'er recall his name,
For he tells of the affinity of alcohol for water,
Which some students know is very true, or if they don't they
oughter.

At Chemistry and Physics, I've thought, “By all the fates,
He'll poison half of Kew e'er long, with the smells that he creates.”
DOCTOR THOMAS gives, I fear, some rather pointed knocks,
When lecturing on Geology, for we're always “on the rocks”;
But still, it's rather int'resting to hear him say, “You know
It came about quite recently—ten thousand years ago!”

Next on the list is TURRILL, and a learned man he is,
At Genetics and Ecology he understands his biz;

He takes us out on rambles with the merry Chelsea lot,
 And shows us heath formations, and much more, I've forgot.
 "GOOD OLD DALLY" comes in here, with Economic Botany,
 And teaches us of lands with trees, and others that have not any;
 Of Rubbers and of Sisal, and many things that grow,
 Until one wonders how his head can hold all he must know.
 DOCTOR MONRO, as you know, is full of insect lore,
 He shows to us thrip, scale and bugs (ne'er seen at Kew before!) ;
 He deals with Coleoptera, Rhynchota, and the rest,
 And tells how woolly aphis became a fearful pest.
 And after reading up all this, we prepare for MR. COTTON,
 Who delights to see the fungus that makes good cheese go rotten ;
 When squinting through a microscope, we perceive a hazy line,
 "Ha, ha!" says he, "that's hyphae, now isn't that just fine?"
 Excitedly, the slide is moved, until we find yet more,
 He looks at this, informing us that now we have a spore ;
 And yet two more, we have to face, before the end's in sight,
 The first, named MR. CROWTHER ; the second, "CHARLIE"
 WRIGHT.

The former says bacteria possess the rare ability
 Of manufacturing nitrates, which improve soil fertility ;
 This is a useful fact to know, with me you will agree,
 And easier far, to understand than Advanced Botany,
 Which MR. WRIGHT unmercifully upon his class inflicts,
 As with weird sketches, on a board, *Palmaceae* he depicts.
 Yet, I suppose the gardener his knowledge must enlarge
 By such, if he would excel, and produce a fine cabbage!

(In an old-time Western Saloon, a notice was displayed bearing the following inscription:—"Please don't shoot the pianist, he's doing his best." The perpetrator of the above lines begs for clemency on the same plea.—T. H. E., 1928.)

BOOK NOTES.

The Propagation of Hardy Trees and Shrubs, by G. C. Taylor and F. P. Knight (published by Messrs. Dulau and Co., Ltd., London, 1927, price 5/- net).

This useful little volume, which might be said to be a companion to Mr. Dallimore's work, *The Pruning of Trees and Shrubs* (see *Kew Guild Journal*, 1927), is of immense value to the amateur as well as to the professional gardener. Its chapters deal at length with propagation by means of seeds, cuttings, layers, budding and grafting, while a chapter is especially devoted to the raising of increased stocks of conifers. All the necessary appliances and devices are referred to, and in addition, there are eight full-page photographs illustrating notable points referred to in the course of the volume. An alphabetical list of trees and shrubs (excluding conifers), with the method to be followed in their propagation, forms a concluding chapter to what should serve as a very useful little manual on an important aspect of horticulture.

E. G. D.

Primulas for Garden and Greenhouse, by E. H. M. Cox and G. C. Taylor (published by Messrs. Dulau and Co., Ltd., London, 1928, price 5/- net.)

This little volume will fill a much needed want and is yet another of the same series of popular issues as *The Pruning of Trees and Shrubs* and *The Propagation of Hardy Trees and Shrubs*. It has been written to serve as a handbook on the many species of that fascinating and popular family, the Primulas, representatives of which are to be found in almost every garden, whether large or small, in all parts of this country. Modes of propagation, whether by means of seed, division, or offsets, are dealt with at length, while a special chapter is devoted to the various methods of cultivation which are essentially to be practised to ensure that success attends the efforts in dealing with a family of plants that has such a widespread geographical distribution. Cultivation under glass of the less hardy species is also referred to in detail, while the concluding chapters are devoted to European and extra-European representatives of this family. A very useful and detailed list, embracing as it does some 88 species, is given, showing the period of flowering near London (*i.e.*, at Godalming, Surrey), and at the Royal Botanic Gardens, Edinburgh. This has been compiled from data supplied by such enthusiasts as Mr. C. T. Musgrave and Mr. R. L. Harrow.

E. G. D.

MESSRS. MACMILLAN AND CO., LTD., have published a series of books that we commend more particularly to the notice of our American readers. These are of the series of Home Garden Handbooks, compiled by Mr. F. F. Rockwell, and are issued under the titles of "The Book of Bulbs," "Shrubs," and "Gladiolus." These useful little volumes are well written and contain many black and white illustrations as well as photographs, and detailed lists of plants, etc., referred to in the text.

A publication that is primarily intended (as the author points out) for Californian, Australian, and South African readers, is also published by Messrs. Macmillan and Co., Ltd., under the title, "A Treatise on Viticulture." This volume is written by Dr. A. I. Perold, B.A., of the University of Stellenbosch, and is published at 25/- net. This is an exhaustive treatise on the Vine, and there are many interesting and detailed chapters on geographical distribution, propagation, pruning, and general cultural notes, while other chapters refer to diseases that are prevalent in vineyards, etc. A chapter of special interest is that dealing with the products of the vine, while an exhaustive list of species and varieties concludes this excellent work.

E. G. D.

KEW NOTES AND GLEANINGS.

THE total number of visitors to the Royal Botanic Gardens, Kew, during the year 1927 was 1,078,088—a decrease of 84,459 on the figures of the preceding year. The falling-off in the number of visitors could, with certainty, be attributed to the dull, cheerless summer and the abnormal rainfall, which totalled 33.21 inches compared with a total fall of 24.96 inches during 1926. The greatest monthly attendance was during May, the figures being 227,063; the highest Sunday attendance, 36,659 (May 8th), and the greatest single day record, 60,104 (April 18th). The lowest monthly attendance was December, with 4,999 visitors; the lowest Sunday attendance was 387 (January 23rd); and the lowest week-day attendance, 6 (November 29th). Visitors on Sundays through the year totalled 472,059, and on week-days 606,029. That advantage is taken of Student's Days is well emphasized by the attendance figures on Tuesdays and Fridays (excluding Tuesdays following Bank Holidays and Good Friday) which aggregated 74,417, as against 62,285 for the previous year.

REFERENCE was made in the *Journal*, 1927 p. 475, to the despatch of a consignment of native British Trees, comprising Beeches, Oaks, Alders, Horse Chestnuts, Elms, and Cricket Bat Willows to the Sydney Botanic Garden, to be planted at Canberra on the occasion of the opening of the new Parliament Buildings. A report was received that they were "received in excellent condition, as fresh as if they had been sent from a local nursery only a few miles away. The roots and wood of the trees were sound and the buds plump and firm." The actual ceremony of planting the trees at Canberra by the Duke and Duchess of York, took place on the morning of May 10th, 1927. On the same day the Governor-General of the Commonwealth and the Prime Minister planted some of the trees at the Royal Military College, Canberra.

HIGH winds of unusual velocity occurred during December, 1927, and during the night of December 25th a heavy fall of snow occurred. Although only about four inches fell, it clung to the branches of trees and shrubs very tenaciously. Evergreens naturally bore the full force of the fall, and consequently much damage was done among them. Conifers, especially cypresses, Holm Oaks, and arbutuses suffered severely, and in many instances trees and shrubs were partially uprooted. The majority of the rhododendrons escaped injury, as did the Cedars of Lebanon, which are usually susceptible to damage during snowstorms, while hollies and yews were almost undamaged.

THE early hours of January 7th, 1928, will be remembered by the many residents of the Thames-side districts, by reason of the abnormal tide, which flooded thousands of homes and did widespread damage and, in some areas, involved even loss of life.

The river rose with alarming rapidity and quickly burst its banks and inundated adjacent areas. In many instances three to four feet of water had entered dwellings and property before the occupants were even aware of the calamity. The night was truly one of devastation without parallel in living memory. The recollection of it can never completely fade from the memories, at any rate, of the hundreds of unfortunate families who suffered so acutely. The local police, firemen, and Council officials did yeoman work in relieving distress. It was not, however, till dawn broke that any true idea of the extent and seriousness of the flooding could be conceived, and the scenes then were distressing in the extreme. It seemed impossible that the flood-waters could have reached so far, and that the usually placid and well-behaved Father Thames could have wreaked such destruction in so short a time. Kew suffered very acutely; over 500 houses were flooded, often to a depth of three to four feet above the road-level, while the plight of those living in basements can well be imagined. The waters reached to the Ambulance in the centre of the main Kew-Richmond road (opposite the Coach and Horses Hotel); the Parish Church, and the War Memorial were surrounded, and the whole of the Green to the Main Entrance to the Gardens was under water. The wall along the river-side of the Gardens was, undoubtedly, the barrier which saved the Gardens themselves from what could only have caused considerable damage, and it is believed that at one point only, near the Queen's Cottage Grounds, did the flood-water penetrate. How near the actual flooding occurred, may be judged when it is mentioned that the Royal Mid-Surrey Golf Course and the Eighty-seven Acres (the old Deer Park), were under water for a considerable distance.

Pumping operations were continued by the local Fire Brigade for several days, and it was due to the untiring efforts of this unit, that conditions were, at any rate, much improved in many instances, though for weeks afterwards residents found it necessary to occupy upper-rooms in their houses.

DURING the past year Kew has been brought into intimate relation with the Empire Marketing Board. At first sight it may appear that there can be little in common between botanical research and commercial enterprise. The policy of the Board has, however, been conceived on broad lines, and a leading feature of that policy is the scientific and economic investigation of the resources of the Empire. In this investigation, so far as plant products are concerned, Kew has been continuously occupied for upwards of three-quarters of a century.

The following extracts from a Report dated June, 1927, "A Year's Progress," define the policy of the Board in this particular aspect :—

"The best service that can be done to the Empire producer is to place freely at his disposal the resources of science and economic investigation."

"The Board has made no attempt itself to engage directly in scientific research. Its proper part was seen clearly from the outset to be that of fortifying existing scientific institutions in such measures as would enable them to intensify or develop their work and of making possible the establishment of new institutions to meet new and proven needs."

In its well-advised decision to avail itself of the assistance of existing institutions qualified by tradition, experience and equipment to further the ends in view, the Empire Marketing Board has naturally enlisted the services of Kew, and has made, through the Ministry of Agriculture and Fisheries, a grant of £4,000.

The particular purposes to be subserved by this grant are set out in the further extract from the Report already quoted :—

"The grant has been devoted partly to the employment of an Economic Botanist at Kew, who will be available either to visit the Dominions and Colonies from time to time or to set free a superior officer of the Kew staff to undertake oversea missions. It will also be used in part for sending botanical collectors to various parts of the world to study and bring home plants of economic importance for cultivation at Kew, and distribution to the Dominions and Colonies.

"The close liason which exists between Kew and the agricultural and botanical departments of the world has proved of inestimable benefit to the Dominions and Colonies in the introduction of new staples and development of the natural vegetable resources of the Empire. With the progressive opening up of new territories and the continual expansion of agricultural enterprise in the Dominions and Colonies the need has arisen for a closer co-operation and a more direct service, and these the grant from the Empire Marketing Fund is designed to afford."—(*Kew Bulletin*, Appendix I., 1928.)

ON the invitation of the Commonwealth Council for Scientific and Industrial Research, Melbourne, the Director, Dr. A. W. Hill, left England in November, 1927, to visit Australia. The object of his visit was to study the botanical institutions on behalf of the Commonwealth Council. He attended the Conference of the Australian Association for the Advancement of Science, at Hobart, Tasmania, in January of this year, and later, on the invitation of the Dominion Government, visited New Zealand. The return journey enabled him to visit Java, Malaya, and Ceylon. During the course of his tour the Director constantly met Kewites, who were attached to the horticultural and botanical institutions in the countries concerned.

MR. H. C. SAMPSON, the Economic Botanist newly-appointed to the Kew Staff, left England on June 11th, 1927, on a mission to British Guiana, for the purpose of studying the local conditions in that country and of suggesting steps necessary for improving the agricultural prospects of that Colony. He availed himself of the opportunity of this tour to visit Trinidad, Barbados, and the Leeward and Windward Islands, with a view to acquainting himself with the agricultural developments which have taken place there. He returned to this country on October 3rd, 1927, and the reports of his tour have been submitted to the Secretary of State for the Colonies. (*Kew Bulletin*, Appendix I., 1928).

MR. W. DALLIMORE, Keeper of the Museums, visited Majorca early in September to procure grafts of several of the best varieties of Almonds. Owing to the large and growing demand for Almonds for culinary and dessert purposes it has for some time been felt that the cultivation of Almonds in certain parts of the Empire might advantageously be increased. In order to raise a stock of the best kinds for distribution, it was decided to procure grafts of the premier varieties grown in Majorca, an island famous for its Almonds.

The grafts obtained were brought to England, where they were immediately worked upon specially prepared stocks. From these grafts it is hoped that upwards of a hundred plants will be available in 1928 for despatch to suitable destinations.

MR. F. N. HOWES, Assistant, Museums, left in December on a visit to the East to study and collect Bananas to be sent to Kew in the first instance, and ultimately to Trinidad, for the purpose of raising strains of Bananas immune to Panama disease. Mr. Howes first visited the Malay Peninsula and later Java, Siam, Burma, Madras and Ceylon.

MR. W. TAYLOR, Assistant Curator, Tropical Department, also left in December on a visit to the East to bring back collections of useful and interesting plants for distribution and to enrich the collections at Kew, and also to study tropical plants in their native homes and under local conditions. Mr. Taylor visited the Botanic Gardens at Penang, Singapore, Buitenzorg and Peradeniya.

(*Kew Bulletin*, Appendix I., 1928).

PRESENTATION OF A PORTRAIT OF MR. BEAN TO KEW.—On the afternoon of Tuesday, June 21st, members of the Kew Staff, and about thirty members of the Garden Club, assembled in the Garden Library to do honour to the much respected Curator, Mr. William Jackson Bean. The occasion was the formal presentation, by Major Reginald Loder of Mr. Bean's portrait to Kew. The Director of Kew, Dr. Hill, in opening the proceedings, said a few words from him seemed desirable as a reason for the gathering that afternoon. Some of them would remember that among the portraits painted by Mr. Ernest Moore, and exhibited at his Exhibition of Pictures of famous Yorkshiremen, last year, there was one, very properly,

of Mr. Bean. He felt at the time that the ultimate home of the portrait should be Kew. In considering ways and means of acquiring the picture, it occurred to him that the members of the Garden Club, to whom Mr. Bean was very well-known, might be willing to purchase the portrait for Kew. He approached Mr. Gerald Loder, who promised to consult the members. The first person to whom Mr. Loder mentioned the matter was his brother, Major Reginald Loder who, with his usual wholehearted generosity, at once volunteered to purchase the picture himself, if Kew, through the Ministry of Agriculture and Fisheries, would accept the portrait. Their meeting that day was the outcome, and he would now ask Lord Lambourne to remove the curtain and expose the portrait to view. Before this actually took place, Major Reginald Loder asked to be permitted to say a few words in explanation of his action in the purchase of the picture. It was mainly for three reasons: first of all, in view of the ready aid that Kew was always willing to give him in helping to solve his many gardening problems; secondly, Mr. Bean, despite his modesty and retiring disposition, was ever ready with his unique knowledge, to help him, an absolute tyro, with advice on the growing of plants and their names; thirdly, Mr. Bean was the author of that wonderful book on Trees and Shrubs, which they all knew so well, and from which most of his own knowledge and enthusiasm for plants had been obtained. He would like to say how much these two volumes needed a third to bring the subject up-to-date, and that he hoped it would soon be ready for the printers and in their hands.

Lord Lambourne, in explaining his presence in that position, said it was as President of the Royal Horticultural Society he was there that afternoon. The relations between that Society and the Director and Staff of Kew were of the best, and members of the Kew Staff were always ready to help the Society in every way. He was very glad to be there that afternoon, in particular to do honour to their Curator. Mr. Bean was a Yorkshireman. He had hoped, in fact, he expected that a man so respected and liked would have had some connection with his own county of Essex; but Mr. Bean assured him there was none. Lord Lambourne then unveiled the Portrait and formally presented it to the Director, who accepted it on behalf of the Royal Botanic Gardens, Kew. In response to numerous calls for a speech, Mr. Bean said that they might be interested to hear the origin of the portrait. He met Mr. and Mrs. Moore in the Gardens, one afternoon, and he and Mrs. Moore sat on a seat talking for some time after Mr. Moore had left. A few days later he received a letter from Mr. Moore, prompted, no doubt, by his wife, asking if he would sit for his portrait. Evidently Mrs. Moore was more impressed by his personality than the artist. He would like to thank Major Loder for the gift of the portrait to Kew, and the large gathering he saw in the room for their presence that afternoon. Sir David Prain then proposed a vote of thanks to Lord Lambourne, busy man though he was, for coming among them to unveil the portrait. He thought, also, they would like him to thank the artist, Mr. Ernest Moore—who was present, with Mrs. Moore—for giving them such a faithful likeness of Mr. Bean, and so pleasant a picture.

MR. F. S. SILLITOE.—In the King's Birthday Honours list of the present year, appeared the name of Mr. F. S. Sillitoe, as the recipient of the M.B.E. for services rendered as Superintendent of Gardens, Khartoum, Sudan. Mr. Sillitoe was selected for his present position by the Director of the Royal Gardens, Kew, and left England to take up his duties in March, 1903; so he is one of the oldest of Sudan Government officials. The history of the final overthrow of the Khalifa, by Lord Kitchener, at Omdurman, in September, 1898, after the country had been ravished by the Dervishes for thirteen years, is well-known, following the death of General Gordon and the Mahdi, in 1885. The present palace at Khartoum, the residence of the Governor General, is erected on the site of the one occupied by Gordon, and has a garden of some eight acres, laid out and planted with lawns, trees and flower-beds, in fact, in keeping with Kew, or other large English gardens. Four grass tennis courts are planted with *Cynodon Dactylon*. The heat is intense, and there is practically no rainy season, so that irrigation is carried on throughout the year, water being pumped up by small, electrically-driven centrifugal pumps from the Blue Nile, in which there is a difference of some twenty feet between high and low flood. During the winter season, Bougainvilleas provide a wonderful blaze of purple. Among Roses, only the Hybrid Teas succeed; but they are a great success. The following trees and shrubs add to the brilliant show of colour:—*Poinciana regia*, *Spathodea nilotica*, *Cassia Fistula*, *C. grandis*, *C. siamea*, *Bauhinia purpurea*, *B. variegata*, *Euphorbia pulcherrima* (the Poinsettia), *Bignonia venusta*, *Beaumontia grandiflora*, *Quisqualis indica*, *Antigonon leptopus*, *Ipomaea Leari*, and other species; *Tecoma stans* and *Caesalpinia pulcherrima*. *Phlox Drummondii*, Zinnias, Cosmeas, Petunias, Dianthi, *Verbena erinoides*, Celosias, Sunflowers, etc., thrive from November till February. Mr. Sillitoe was born at Redhill, Surrey, in 1877, and commenced his training with Messrs. J. Cheal and Sons, of Crawley, staying there four years. Possessing the spirit of adventure and a desire to go abroad, he went to the Chelsea Nurseries of Messrs. J. Veitch and Sons, and for two years worked in their New Plant Department, under the late Mr. John Heal. Then followed the three years at Kew in the Tropical, Orchid and Propagating Departments. A curious coincidence is that while there he and Mr. Dawe—(now in Sierra Leone)—were equal-first in the British Botany course, and within a year Mr. Dawe was his nearest Kew neighbour, in Entebbe, Uganda, and at Christmas, 1904, Mr. Dawe called on him at Khartoum, having travelled the whole Nile route from the South. In 1919, Mr. Sillitoe made a tour of the Yei River valley, along the Congo border, and made a fine herbarium collection from an area not touched since Schweinfurth visited it in 1870. During last winter Mr. Sillitoe spent some months at Port Sudan, on the Red Sea, laying out the Public Gardens. His Highness The Sultan of Egypt conferred upon Mr. Sillitoe the Order of the Nile, in 1919. (*Gard. Chron.*, 1927).

WEDDING BELLS.

Miss E. Leone C. Burrell to Mr. Samuel T. Lees
at St. Mary's' Wans-
ford, Peterborough. . . 12th Oct., 1927.

Mr. E. V. Willoughby to Miss Lucy M. Mayling
at Wittersham, Kent. . . 10th March, 1928

Mr. Albert A. Cavanagh to Miss Doris Phillips
at Buenos Aires, Argen-
tine, S. America. 20th April, 1928.

KEW METEOROLOGICAL NOTES.

	Rainfall, in Inches.	Temperature.	
		Maximum.	Minimum.
1927.		F.	F.
January.....	1.75	53.5	15.5
February.....	3.31	53	17.5
March.....	2.63	68	22
April.....	2.26	72	21
May.....	1.07	76.5	23
June.....	3.13	84	32.5
July.....	3.07	83	38
August.....	4.26	79	39
September.....	4.61	77	29
October.....	1.39	67	26
November.....	2.70	63	21
December.....	3.03	56	15
Total Rainfall for 1927	33.21	—	—

The rainfall for 1927 showed an increase of 8.25 inches, compared with 1926, and reference to the above records will be sufficient to show that the fall was heaviest during the latter half of the year. The year 1927 was also marked by dull, unsettled weather and low temperatures were consistently recorded. The highest temperature recorded was 84 deg. (June), while during December the thermometer in the screen fell to 15 deg. The Autumn months, in particular, were unusually sunless, and fog was very prevalent during the months of November and December, particularly so when the weather was inclined to be mild.

On the night of December 25-26 an unusually heavy fall of snow was recorded, and the year closed with gales and high winds generally.

THE MOUNTAINS OF THE MOON.

League upon league of towering crests they lie,
 In serried ranks uplifting to the sky,
 Buttress'd by foothills, that heave upon the plain,
 Dipping in vales they sink to rise again.
 Beloved of mists, that veil their ample breast
 Oft' crowned by clouds, that passing sink to rest,
 Frowning in storm; sad when the daylight dies—
 Beauteous and glad when morning gilds the skies.
 League upon league of ice and untrod snow,
 Down many a pass the icy torrents flow,
 Far over head the watchful eagle flies,
 O'er all this waste no living thing descries.
 Awesome and sad beneath the icy blast,
 When on the wind the snow drifts hurrying past,
 Far down the abyss the echoing thunder peals,
 The lightning's flash, the awful depth reveals.
 Fast down the slopes, the mountain torrents glide
 Impetuous, by rock nor crag denied
 Till, fanned by tropic wind they reach the swelling plain
 Where elephants' loud trump proclaims their peaceful
 reign.
 O, Marguerita, Queen of this domain,
 Crowned by the snow, you dominate the plain,
 O'er hill and dale; o'er forest, lake, and flood,
 Silent, unchanging thro' ages thou hast stood.

F. GAMMON.

ODE TO UGANDA.

O, happy land, where from a thousand hills
 Flora doth scatter wide her plenteous showers,
 'Till forest, hillside, swamp, together vie
 To make of you a paradise of flowers.
 A hundred tints gleam in your noble trees,
 Sunkissed, that murmur in the gentle breeze;
 Here, beautiful Spathodea, there
 The Coral flower glows on the radiant air.
 On every trunk, ferns, mosses, orchids cling,
 And aerial roots that on the breezes swing,
 Seeking the moisture of the woodland air,
 And Beauty's cup o'erflowing everywhere.
 The eastern gates roll back, and natal day
 Charms sombre night's last lingering shades away,
 And fleecy mists float o'er the dew-cooled earth,
 Fleeting they fade, and to the day give birth.
 Each dew-drenched leaf, each floret fair
 Yields subtle perfumes on the morning air;
 The pied Nganga, in the forest glade
 Calls to his mate, hid in the leafy shade.

The chattering monkey in the tree-top swings,
 A myriad insects wake and spread their gauzy wings,
 And every feathered songster on its way
 Chants sweet and clear its morning roundelay.
 Beneath the golden noon all Nature sinks to rest,
 Only the frail Papillion, in gaudiest colours dress't
 Flits up and down the lonely forest glade,
 While drowsy birds nod in the grateful shade.
 The sun declining in the golden west,
 With lustrous tints sheds forth his dying ray,
 And faery clouds with roseate hues impress't
 Crown the calm splendour of your perfect day.
 Thou wondrous lake, on whose calm bosom rest
 A thousand verdant islands, by gentle winds caress't,
 Thy crystal waters catch the heavens softest hue,
 Reflecting it again, a more resplendant blue.
 Thou stretch'st where the low horizon spans,
 An inland sea amid Afric's thirsty lands ;
 By hill and rock, by palms and leafy woods,
 Majestic, wonderful, in all thy changing moods.
 From Ripon's Falls, thy o'erflowing waters glide,
 For ever bounding onwards in a surging tide,
 Till, 'neath an alien sky they make the desert smile,
 By Pyramid and palm they form the lordly Nile.
 No Northern land can with thy beauty vie ;
 Surpassing are thy ethers ; unequalled is thy sky ;
 No sobbing wintry wind e'er mourns thy summer past
 And o'er thy placid brow no icy veil is cast.
 Smile on, dear land of sunshine, evergreen ;
 Beloved by generous Nature ; by Beauty crowned Queen.

F. GAMMON (Dec., 1926).

BENEVOLENT FUND.

REFERENCE is made in another column to the case of an old Kewite to whom assistance was given from the Benevolent Fund.

No case of need could have been more urgent ; none more deserving. It often happens, however, that we are inclined to become forgetful of the existence of a Fund when that Fund is only infrequently called upon to give assistance.

The generous response to the appeal made at the Annual Dinner brought in a helpful sum ; it indicated that when the need arises, the true spirit of Guildship is not wanting amongst Kew men.

The Fund is in a better position to-day than it was a year ago, but the help it might give in its present state can only be very limited. Will you not help to make it really worthy of Kew men ? The Secretary or I will be happy to receive donations.

R. F. WILLIAMS (1928).

BOTANIZING IN SOUTH-EAST SPAIN.

I spent last May collecting specimens for Kew near the coast of south-east Spain. This was made possible by an accident to Mr. N. Y. Sandwith, of Kew, only a few days before he and the Rev. E. Ellman had planned to commence a southern trip. The Director gave me the opportunity to take advantage of Mr. Ellman's kindness in accepting me as a substitute for my unfortunate colleague.

My botanical discoveries began in Sussex, with primroses, which yellowed the railway banks for incredible distances in the vicinity of Balcombe. It is needless to tell the reader, if he be a true-born Englishman, that I found no floral picture in southern Spain, spite of all its rarities, to compare with this heavenly carpeting. Though deeply in love with Spain, my companion of the trip shares my native enthusiasm, for often, after a successful day on the sierra, he would tell, with great relish, of the amazing number of rare plants which grew in his father's old parish in Sussex.

According to plan, I made signs to attract the attention of the Rev. Ellman, at Lewes station, and, though my carriage was at one end of the platform and he was at the other, the local station officials did not dare to move on their train till the time at last came when the awe-inspiring passenger and his many baggages were safely aboard.

The channel crossing was made in good weather ; a warm, gentle sou'-wester, a sunny sky, and a calm sea. At Dieppe, the Customs insisted on my two huge bundles of drying paper being unpacked. These, with three presses and a vasculum, formed my botanical outfit.

Normandy, from the train, looked much like my native West Country, with its many apple orchards and groups of black poplars infested with mistletoe.

Between Paris and Etampes in the setting sun, fields of cowslips, sheets of *Stellaria Holostea* on the railway banks, and a huge forest away on the eastern horizon impressed most.

According to rule, I did not sleep a wink that first night. My diary reads : Poitiers, midnight ; Angouleme, 1-30 a.m. ; Bordeaux, 3-30 a.m. Mr. Ellman, enviable person, sleeps better in a train than in a bed, and on this occasion, reclining opposite me, he seemed to revel in it. I had my revenge when, at the coming of dawn, we rushed through mile after mile of *Pinus maritima* south of Bordeaux, and the Pyrenees loomed mighty out of the south-east sky.

At Irun, over the Spanish frontier, more Customs officers, in military uniform this time ; and then a train for Madrid. Mountains soon sprang up on all sides, and the flora became less and less like that of Britain. The bright colours of such plants as blue Linums and Aquilegias, and *Centranthus ruber*, seemed to predominate. For many miles we saw few fully-grown trees, but sometimes as far as the eye could reach, hill and valley had been planted, a few years previously, with a mixture of conifer, oak, hazel, poplar,

horse-chestnut, plane, "acacia," and, most common, perhaps, beech. Many short tunnels helped us through the Cantabrian Mountains, and we caught occasional glimpses of patches of snow on the very flat-topped summits. Near Alsasua (11-45), we saw quite ancient specimens of oak and sycamore. Soon the mountains smoothed off to flat wheat country, with its few rivers marked out clearly by poplar-lined banks. South-west of Valladolid (4-20) great forests of umbrella pine alternated with equally extensive wheat lands. Then came damp and chill in the cloud-and-snow covered Sierra de Guadarrama, north of Madrid. Black storms hovered, but held off.

Early on the morrow, May 5th, we deposited our luggage at Atocha Station, ready to start that night for the south. My companion spent the day at wonderful Toledo, while I explored Madrid, especially its botanic garden. This is quite small, there are no lawns, and the place is carved up into rectangular beds of herbaceous and shrubby plants in related order. These are overshadowed, probably necessarily, by a dense canopy of trees. Avenues of fine specimens of *Cellis australis* have their grandeur neutralised by too numerous neighbours.

A range of lean-to glasshouses runs the length of the square on the north side, sections being devoted to shrubs, "stove" plants, palms, ferns, succulents, and orchids. In the open, *Chamaerops excelsa* was common and flowering profusely. *Eucalyptus globulus* was fine, and a Juniper over 100 feet high was noted alongside a splendid specimen of *Salix babylonica*. On the south side of the Garden I came upon representatives of the cultivated vines of the country, trained over iron pergolas. A system of irrigating channels enables the beds to be well and easily watered. The common weeds included our beautiful, ineradicable *Convolvulus minor*, *Poa annua*, *Senecio vulgaris*, a small white-flowered *Veronica*, and a curious umbellifer, *Falcaria Rivinii*. Before leaving, I met the Professor of Physiology, who showed me the library of about ten thousand books. I saw some good sets of important botanical authors and a splendid unpublished work by Celestino Mutis, on the flora of New Granada.

At 10 o'clock that night we began the last stage of our long southern journey, and by dawn next morning had covered about a third of the distance to Malaga. From this point till near Cordoba olive trees dominated the scene, sometimes covering the whole area, hill and valley, within sight. Where they thinned they occurred on "islands" of very red soil. Hedges of *Agave americana* seemed to mark farm boundaries. As we approached Baeza the great white-capped Sierra Nevada was rising into the southern sky. The Guadalquivir, its banks splashed with pink *Tamarix*, flowed near us for some miles. On the sides of the railway the flora grew very rich about this point; huge Onopordons, 6 feet high, rich waves of *Anchusa italica*, and a species of *Daucus* being especially conspicuous. Beyond Cordoba, where we changed trains and snatched refreshment, the lovely *Nerium Oleander* began to appear along the streams and fill the valleys. About here, hedges of pomegranate shared with *Agave* the marking of

boundaries. Bobadilla was next passed, and soon we came to the wonderful gorge of El Chorro. A gorge of great depth has been cut here by the Guadalhorce through the calcareous coast range. The train climbed along the left bank, through many tunnels, near one of which we caught, all too fleeting, a glimpse of the grandeur of the scenery. Then appeared a sudden transformation. We emerged without warning into the warm sunshine of sub-tropical Andalusia, with its luxuriant orange-groves in the valley below, and the blue line of the Mediterranean on the horizon. As we descended, the sides of the mountains were seen to be covered with the dwarf *Chamaerops humilis*, the only palm native to Europe. We approached Malaga through a valley of orange and lemon groves and fields of ripening barley, where reaping had already begun. Malaga, oldest of Mediterranean seaports, has a semi-circle of mountains behind it and a bay, of the same shape, in front. The Malaga plain is widest to the west, formed by the delta of the Guadalhorce. Here, the vegetation is very luxuriant. Oranges, lemons, figs, prickly pears, pomegranates, sugar-cane, and cotton are among the plants cultivated. The charm of the city is somewhat marred by the dust and dirt of its meaner streets, and the noisy crowds which throng the main thoroughfares until a late hour at night. There is a splendid mixed avenue of planes and great date palms bordering the public gardens, and stretching for nearly a mile along the south-east front of the town. The flower-beds in these gardens are well kept, but need daily hosing. Following are some of the plants cultivated here:—*Cordyline australis*, *Dracaena Draco*, *Strelitzia Reginae*, *Araucaria brasiliensis* and *A. excelsa* (the latter 50 feet high), *Akocanthera spectabilis*, *Lomatia ferruginea*, *Ficus elastica*, var. *variegata*, *Acacia uruphylla*, *Carissa edulis*, and *Phyllanthus nervosus*. Amongst these were bedding plants, such as *Begonia coccinea*, *Briza minor*, yellow and white-flowered Centaureas, "geraniums," and Cannas.

We found a "good" hotel, near the cathedral, where the chief drawbacks were bad sanitation and late meals. Then we began our collecting. On the morning after arrival, we took a tram to the foot of the low mountains, where the eastern half of the semi-circle runs out to the sea. Before reaching these hills, we passed gardens where roses were in full bloom, and geraniums, smothered in blossom, reached half-way up the walls of the houses. Up over the very roof of one building scrambled the finest *Bougainvillea* I have ever seen. We found the vegetation on the mountain slopes in a disappointingly advanced state, and Mr. Ellman feared that summer had come unusually early to southern Spain. Unhappily, his fears were well-founded, and we were confronted by a withered-up countryside at all the districts we visited during our month's stay. On this first day we collected about fifty specimens. Few were of outstanding interest, except a variety of *Cynoglossum cheirifolium*, new to science, and a colony of *Aloe vera* in full flower. I tried to argue that the *Aloe* was too near a garden to be very interesting, but I admit now that the prospect of having to dry the fleshy leaves of this plant influenced my attitude. However, I gathered a good specimen; and I also felt obliged to take material

of a large and spiny, but very beautiful globe artichoke, *Bourgea humilis*. While gingerly tackling this, with the aid of the fearful Kew knife, I disturbed a gorgeous red-and-green lizard. Mention of the prickly *Bourgea* brings me to a curious circumstance. Mr. Ellman, who had hopes of covering a large area, would not allow me to collect everything good-looking in our path, but wished me to concentrate on things which had not been obtained by two young Kew colleagues of mine, whom he had taken to Spain in recent years. Now, it seemed strange, to say the least, that whenever we came to a robust, wicked-looking thistle, the order invariably was, "You had better take it; neither of the other boys got it."

Those mountains near Malaga were sometimes calcareous, but more often appeared to be composed chiefly of conglomerates and dark shales. Dotted about their slopes, at considerable distances from one another, were farm-houses, whose whitewashed walls stood out glaringly in the hot sun. Around them were drought-affected patches of barley, wheat, and oats; and, forming wider rings in more rocky ground, locust, fig, and olive trees. Roadside hedges were sometimes of the large, yellow *Opuntia vulgaris*. On our return journey we fell in with scores of peasants, each with his mule staggering along under a square pile of *Genista equisetiformis*. This beautiful legume, though almost confined to this part of Spain, is locally extremely abundant.

At dinner that night I first tasted the refreshing, but not rich fruits of *Eriobotrya japonica*, which the Spaniards call Nispero del Japon. In the botanic garden at Madrid, two days earlier, the fruits of this tree were only just forming.

Next day, May 8th, we visited the flats west of the city. The most striking plants here were specimens of the handsome *Orobancha foetida*, parasitic on *Ononis ramosissima* (a charming host!), and several colonies of the almost arboreal *Ricinus communis*, var. *africanus*. We were also fortunate enough to find a few plants of that queer composite with large sessile capitula and cymose branching, *Cladanthus arabicus*. The Spanish reed, *Arundo Donax*, rose high and in great profusion from the deeper, wetter ditches.

May 9th was spent on the Sierra de Cartama, farther afield to the westward, where the only fern of the tour was gathered, *Pteris longifolia*. On Cartama was also found *Tyrimnus leucographus*, a graceful little thistle, whose headquarters are in the Balkans. It does not seem to occur either in Portugal or North Africa.

The following day was the most memorable of all. We took train in the early morning to Alhaurin el Grande, on the north side of the Sierra de Mijas, and eventually climbed to about 5,000 feet. Our first finds were the creeping, woolly *Linaria villosa*, and *Saxifraga granatensis*, both growing under projecting rocks near the foot of the mountain at the very spot where Boissier, the great French botanist, had found them exactly ninety years before. Writing in the London Journal of Botany for 1845, on his visit to Alhaurin and the Mijas, Boissier calls Alhaurin, "a perfectly earthly paradise." However, a little later he adds: "The public-house or posada, where I stopped, was, however, in disagreeable contrast with the rest of the village,

being filthy, inconvenient and infested with bugs ; while to complete my annoyance, a party of gypsies, here called *Gitanos* had taken up their abode in it, and, being the roughest and rudest people on earth, they spent the whole night in bawling, shouting and quarrelling. The next day I went to visit the springs, to which this district owes its fertility. Some of the village wags, who generally spend their time lounging about the houses of public entertainment, in order to chat with newcomers and to learn the news, followed me during my walk and took care to spread the intelligence, as we went along, that I was about to turn loose a most wonderful snake in the waters. The tidings took effect, and half the village was quickly at my heels, while a rolling fire of jests was kept up between the mystifiers and the mystified, amid which, my servant, suddenly raising the lid of my tin botanizing box, increased the sport by putting to flight a flock of children, who thought the monster was already giving them chase." We found them still more troublesome. Some youths followed us for some distance up the mountain-side and, using slings, sent stones whizzing in our direction. When things were getting a bit desperate, Mr. Ellman fell, cutting his forehead badly. The sight of his bleeding face alarmed our assailants and they retreated. I begged him to return to Alhaurin, as he was faint from loss of blood ; but this amazing septuagenarian had set his heart on the conquest of the Mijas and decided to go on. At intervals of a few hundred feet he was forced to rest. Each time he slept, but as I, at his suggestion, allowed him only twenty minutes, each time he awoke unrefreshed. Then I lost my precious Kew knife and, pointing out how necessary it was to recover it, I went back along the track. Nearly an hour elapsed before my return, and my companion by that time felt much better. We searched in vain for water to drink and to wash the dried mud and blood from his face. Soon, owing to our recent excitement and the steepness of our climb, we could not move our tongues sufficiently to speak above a whisper. In these circumstances collecting was irksome and we did no more than snatch the rarest things that grew along our narrow track. This was exasperating, as the Mijas is reputed to be singularly rich in desirable plants. *Alyssum atlanticum*, and that queer relative of *Rafflesia*, *Cytinus hypocistus*, were two of the best finds. We also took two other charming things, in *Senecio minutus* and *Echium albicans*. From the highest point on the sierra we could just make out the rock of Gibraltar, and, with difficulty, even lofty Ceuta, on the North African coast. At eleven o'clock that night we stumbled down into the little town of Mijas, where Mr. Ellman, then a ghastly sight, said he would try to arouse the pity of the inhabitants. He succeeded only too well. The streets became quickly full of people tramping along behind and in front of us. The priest was called out, and the two brothers of the cloth tried to converse in the ecclesiastical tongue. I, meanwhile, was busily croaking out " *agua* " to every Andalusian who pushed his inquisitive nose anywhere near my own. After much bother we found water and doctor, and, a little later, food and bed. In the morning we joggled in a mule-cart to a nearby station and so to Malaga and breakfast at 9 a.m.

We got no further, on the 11th, than the ruins of the old Moorish castle overlooking the city, where a few maltreated bushes of *Nicotiana glauca* were trying to prolong the life of the crumbling walls. The way thither took us through the British cemetery, which is well-tended and altogether a beautiful spot. It was laid out by the British Consul in 1830. Before that time, Protestants who died at Malaga were laid in the sand of the shore, their bodies being frequently exposed by the waves during winter storms. The remainder of that day I spent in changing the paper containing my specimens, and preparing for a motor-bus journey on the following morning sixty miles westward, to Estepona.

About half-way along this coast road we passed near to a cork oak forest, which looked very tempting with its relatively rich ground flora.

We stayed but two days at Estepona. Mr. Ellman was very ailing, owing to the effects of his fall on the Sierra de Mijas, and an unusually severe attack of asthma, and he had reluctantly to abandon high mountain climbing for the remainder of the tour. The relatively flat country stretching east and west of Estepona is well-cultivated, but an occasional garden wilderness (*i.e.*, botanical paradise) together with a few rocky hills and the wide sandy shore, gave us some interesting specimens. *Delphinium peregrinum* was growing out of the bare sand, and in a ditch on the road-side was discovered, to the delight of the parson, the beautiful *Tetragonolobus conjugatus*. Later in the month we collected its rarer relative, *T. pseudopurpureus*. As usual, the genus *Ononis* was well-represented in the Estepona flora, including *O. filicaulis*, which was an addition to Mr. Ellman's list. Following are the rest of the better things collected here:—*Pulicaria arabica*, *Eryngium dilatatum*, *Anthyllis Gerardi*, *Solanum ochroleucum* (beautiful orange fruits), and *Cichorium divaricatum*. *Trifolium subterraneum* was also taken, so splendidly in fruit that its identity was not recognised until some time later.

A curious feature of this coast is the long line of old Moorish look-out towers, mostly still intact, a few miles distant from one another.

We shared a room at the so-called hotel, and this dirty room was on the ground floor. The dirty children, who go to bed so late in Spanish towns, put their noisy mouths in through the open window and yelled a welcome to their foreign guests. The "sleeping machine" opposite me was quite undisturbed by this din, though, in a fit of jealousy, I gave the little urchins a chance to do their worst before shutting and shuttering the window against them. Very early next morning I sat outside in the pure air writing letters. A hundred yards away could be seen, through a gap in the houses across the street, the waves breaking on the beach. They were larger than usual, for there were storms about, the only rain seen in those parts during last May. Myriads of noisy swifts circled above the town, and ever and anon a peasant crossed the cobbles, off to the fields with his panniered mule. A small crowd round a table nearby were drinking coffee—black coffee; and a hundred goats, heavy with milk within hail!

May 14th found us back at Malaga once more, and my next job was to despatch the first parcel of dried plants to Kew. Mr. Ellman, about this time, met an old friend of his, who advised us to send the plants home by boat. He was in the shipping business.

Our programme for the 15th took us back along the Madrid line as far as El Chorro of the wonderful gorge. The railway-station is hemmed in by almost perpendicular cliffs, among which we found about a dozen good plants. One of these was the pretty pink-flowered *Linaria satureioides*. The seeds of this species have a beautiful, boat-shaped, membranous margin.

We left Malaga for good on the 16th of May, travelling by the sea-side train to Torre del Mar and thence inland to Velez-Malaga. The first part of the journey was delightful, the blue sea almost touching us on the right, and high cliffs towering above us on the left. The vegetation was scanty under the scorching sun, but the greyness of the shore was relieved by patches of *Opuntia vulgaris* and *Mesembrianthemum edule* bearing their yellow flowers.

Velez-Malaga, in common with so many other towns of southern Spain, is situated at the foot of hills crowned with Moorish ruins. Here the mountains stand well inland and the wide stretch of low land between Velez and the sea is well-watered by the Rio Velez and its tributaries. We found, on the banks of this river, shaded partly by cool Poplars, a fairly rich flora. The commonest plant was the pampas-like *Saccharum Ravennae*, unhappily not then in flower. We "waded" through a mile or two of this handsome grass, which lined both banks of the river. In places it formed a support for the rich purple *Lathyrus tingitanus*. Further on the river bank was flat and marshy, and the *Saccharum* ceased. Growing in the mud at this spot was quite a number of plants with finely-cut leaves. Specimens of these were later identified as *Tagetes erecta*, an American marigold. Returning to Velez, we crossed a rich, cultivated plain, through fields of sugar-cane, potatoes, and various corn crops. *Arundo Donax* again monopolised the streams.

Our small but clean fonda at Velez almost surrounded, Moorish fashion, a sunken garden. This was relatively damp and cool and in it were growing bananas, palms, hibiscus, jasmine, roses, honeysuckle, and *Eriobotrya japonica*. This last plant appears to bear good crops of fruit in the south of Spain. In the dark soil beneath were borders full of *Viola odorata*, showing evidence of much attention and care.

In Velez goatherds could be seen going from door to door with a tin jug in one hand and a goat in the other (by one of its horns). The bell hanging from the neck of each goat gave notice of their approach, and into the jug was drawn, at the door, the quantity of milk required.

It is a difficult and tedious task passing through a Spanish town owing to the numerous and narrow cobbled streets, at all angles to one another, and with many blind endings.

A train took us, on the 19th, inland still farther, north-eastward to the Granada frontier near Ventas de Zafarraya. From here,

high up on the Sierra de Tejada, we walked back by the side of the line to Periana, a distance of some ten miles. We managed to get there a few minutes before the Velez-bound train overtook us. The next train was due two or three days later! Lack of time had prevented us straying far from the track into what appeared to be rich botanizing country. Two of the finest pictures were provided by the rather sporadic, but handsome *Iris xiphium*, one of the Spanish irises of my father's old garden, and sheets of *Convolvulus tricolor* in the cornfields on the lower mountain slopes. Among other interesting finds were *Hippocrepis unisiliquosa*, *Anthyllis cytisoides*, handsome *Echium pomponium*, and a charming little *Anchusa*, *A. undulatus*. The gorgeous *Anthyllis Dillenii* was also collected. During the upward journey in the morning, we trained through a belt of pink hollyhocks, of which there was not a single specimen found beyond Periana. On the return, however, the train halted for a minute or two at a small station in the haunt of this beauty, and I was able to jump out and grab a poor specimen, amid threatening shouts from the horrified officials. The plant proved to be *Lavatera triloba*.

Two things stand out most clearly in my memory of Velez-Malaga. Firstly, men and boys standing on the highest points of the Moorish ruins above the town, apparently trying to catch swifts with long white stakes and string. The string must have been extremely light to float horizontally in the breeze, with an almost lighter-than-air bait at its end. Then there was the south wall of our hotel completely covered with the gorgeous blue flowers of an *Ipomoea*. It must be a fine floral picture to beat this.

On May 20th, we left Velez for Orgiva, up under the south side of the Sierra Nevada. A mule cart took us to Torre del Mar, on the coast, and thence we journeyed to Motril by a Malaga motor-bus. While waiting for this, we watched oxen pulling boat-loads of fish out of the sea and up the beach. The road from Torre to Motril passes through some magnificent coastal scenery as it winds ever in-and-out of the seemingly endless number of bays and capes. At one time we were high above the sea, at another at sea-level. Sometimes at an outer-curve, when the corner was sharper than usual, the impatient 'bus would come perilously near the edge of the cliff, which often fell sheer several hundred feet. Much skill and labour had been expended in hewing this fine road out of the rocky slopes. Near Nerja, at sea-level, I saw *Asclepias curassavica* forming its orange-red patches along the roadside. In the larger bays, where towns nestled, were always many orange groves. Apricots, almonds, and figs were also common, and fine crops of maize and sugar-cane. The chief towns passed through en route were Nerja, Almuñecar, and Salobrena.

We stayed but one night at Motril, going directly inland to Orgiva by car on the morning of the 21st. This was a very tortuous road that led to Orgiva. While yet some distance off, we came into view of the town, which has a beautiful setting. Mountains everywhere in the picture, but all, including a high range to the south, the Sierra de Lujar, were dwarfed by the mighty north wall of the

covering of the higher slopes. On another day a private car took us to low, stony hills, lying to the eastward, where we collected *Fagonia cretica*, *Lavatera cretica*, the charming *Cucumis Colosynthis*, and sundry lesser lights.

The public gardens at Almeria are strikingly similar to those of Malaga. In each case about a dozen men in blue overalls are apparently constantly employed. The beds were very trim, and the plants in splendid condition. Among the woody things were palms, as at Malaga (but not so fine), pale double Neriums, *Plumbago capensis*, *Morus alba*, *Elaeagnus angustifolia*, *Jacaranda mimosae-folia*, and *Acacia longifolia*. The beds beneath were edged with yellow-flowered Centaureas, *Atriplex Halymus*, and pink and yellow Mesembrianthemums; and they contained such plants as *Schinus molle*, a species of *Ipomoea*, and antirrhinums, delphiniums, scabious, hollyhocks, cannas, dianthus, and marguerites.

We definitely left the south on May 27th, moving up the Madrid line to Guadix, on the north side of the Sierra Nevada. This town is interesting because its southern suburbs are cave dwellings in rising ground formed of that peculiar geological deposit known as loess, and inhabited by gypsies. The "roof" of this structure, through which the chimney-pots protrude in amazing and amusing confusion, is used for growing crops. This flat, soft, stoneless soil made the most ideal roof-garden I have ever seen, and was in striking contrast to the rocky paths we had trod almost daily hitherto. Garden hedges hereabout were of *Elaeagnus angustifolia* and the sweet fragrance of its flowers filled the air. We did not get a full day here, as Mr. Ellman was too ill to go out. However, I managed to steal away into the fields for an hour or two. The air was cooler now, and green grass appeared once more; there was also a decided increase of temperate flora on this side of the Nevada. *Sambucus Ebulus* was common on the stream-sides, *Papaver hybridum* in the wheat-fields, and I saw a most beautiful hedge of white roses bordering a lane. The best Guadix finds were *Anchusa granatensis* and a *Linaria* near *satureioides*.

The circle was completed on the 28th, when we got back to Madrid, where my companion became so ill that we could not move on till the 31st. He very kindly enabled me to pay a visit to Toledo. This is a wonderful old city indeed—the very railway-station has stained-glass windows. I had just time to go into the famous cathedral, which took more than two hundred years (1227–1493) to build.

A day at San Sebastian completed our Spanish tour. Persistent rain at this popular seaside town kept us in most of the time, and *Lilium pyrenaicum*, gathered on a height overlooking the Bay of Biscay, was almost the only find of note.

We reached home on June 3rd, just as night was falling—one with gastritis and the other with chronic asthma. How very, very good it was to be back again.

E. N. (1927).

Nevada, on which the snow still lingered. That same afternoon we rambled westwards towards Lanjaron, keeping chiefly to the higher ground which forms the foot-hills of the Nevada. Certain low shrubby plants, such as species of *Cistus*, *Helianthemum*, *Thymus*, *Genista*, and several other Labiates and Legumes, make the mountain flora of this part of Spain look rather drab and uninteresting—at least from a distance. A closer acquaintance proves that this is only a general basis. To the patient botanist many rare and delicate treasures are revealed. Contained in our large bag at Orgiva, on the 21st and 22nd of May, were *Ononis pubescens*, *Delphinium Staphysagria*, *Orchis Durandii*, and four Orobanches, including the little blue *O. nana*. The Orchis was growing in what I called a "little bit of England," a green stripe down the brown side of the hill, caused by a high-placed spring. Another good find was a solitary flowerless specimen of *Hypericum crispum*, a plant not hitherto represented in the Kew herbarium from Spain. On the evening of the first day at Orgiva, we were returning home down a wet, pebbly lane, when Mr. Ellman fell and cut his forehead again, and more deeply, across the old Mijas wound, which had been healing up nicely. I got him up and on to the town, where he insisted on my searching for a chemist. But the chemist, in whose shop the parson sat down expectantly, held aloof, protesting that a *medico* should be consulted. The old man sat on, hoping to make the other change his mind. All the while the blood ran down and over his face, and the children of the town filled the street and overflowed into the room. Eventually we prevailed on him to see a doctor, who stitched up the wound, and charged ten pesetas.

Orgiva is on the main road from Granada to Almeria and it is possible to get from one to the other by motor-bus. Leaving Orgiva at 9-30 a.m., on the 23rd, we arrived at Almeria in about twelve hours, changing buses at Berja, which is near half-way. We must have covered more than a hundred miles, and the ever-changing mountain scenery of the first half of the journey was the grandest of the whole southern tour. We were travelling too fast to be able to identify many plants, but in the mountains north-west of Albulol our route lay through a cork oak forest containing some magnificent and ancient specimens.

South of Albulol the 'bus forsook the road and rattled for some miles along the bed of a river, now dry, but in winter evidently a raging torrent. Between Adra and Almeria the mountains fell back from the sea and a perfectly flat plain, or low plateau, stretched to within a few miles of the town and was bisected by our straight, white road. This plain looked a veritable wilderness, barren, with a few miserable looking houses at intervals near the road.

The mountain slopes were now becoming really scorched-up, and our four days botanising at Almeria yielded but few plants. On the north-eastern side of the Sierra de Gador we obtained several interesting things, chief among which were *Anthyllis Genistae*, *Coronilla juncea*, *Galium ephedroides*, and a charmingly queer umbellifer, *Lagoecia cuminoides*. Esparto grass, *Lygium spartum*, and that drought resister, *Sonchus spinosus*, formed the chief

A KEWITE IN THE ARGENTINE.

SINCE my arrival here, in December, 1926, to take charge of the development of Messrs. Liebig's Extract of Meat Co.'s "Yerba Maté" Plantations, situated in the territory of Misiones and the north-east corner of the Province of Corrientes, my time has been fully occupied, and I have found my work full of interest. From the first, I have had to deal with the raising of new plants, planting, cropping, and harvesting of Yerba Maté, or the Paraguayan Tea plant (*Ilex paraguayensis*).

In this article, I shall give a short description of the various processes involved in the production of the Yerba Maté of commerce, which I hope will prove interesting to readers of our *Kew Guild Journal*, and more especially to any Kewite who contemplates coming out to the Argentine. This country holds wonderful prospects for the Kew-trained man, and I certainly advise any Kewite who gets "half-a-chance" to come out here, and not hesitate, as men of practical horticultural experience, or with any technical training are few and far between, especially in this part of the Republic.

Most of my work here is occupied in the plantations, riding on horseback from one area to another. Since I arrived here I have covered an average of 40 miles per day, often employing four different horses. Up to now, we have plantations covering an area of over 1,300 hectares, and by the end of 1928 we hope to have over 1,800 hectares of land under Yerba Maté cultivation alone. To date we have in all 700,000 trees, ranging from one to fifteen years old, and in 1928 it is hoped that a further 300,000 more trees will be planted at La Merced and thus complete the million trees which are required.

At the present time, we have three Fordson tractors, and three treble-disc ploughs preparing 500 hectares of land for next season's new plantations. The digging out of the holes and the planting of the young trees is usually let out to contractors, who receive an allowance per tree that survives at the end of the year following the planting, while the work of digging the holes is paid for at the rate of so much per thousand.

The native Indians here are excellent workers, in so far as manual labour is concerned; but where good judgment is required in the pruning and cropping of the larger trees, there is considerable room for improvement, and I consider that, eventually, some good Italian labour will have to be introduced to obtain reliable tree pruners, from the southern provinces and Buenos Aires.

The national territory of Misiones is about 11,500 square miles in extent and is situated in the north-east corner of the Argentine Republic and borders on Brazil and Paraguay. Misiones owes its name to the fact that it was in this district that the Jesuit Fathers, centuries ago, established extensive missions amongst the Guarani Indians.

To this day those old Jesuit ruins are one of the fascinating features of the countryside, and near them there are to be found several varieties of excellent oranges, Valencias in particular. Most of these old trees are over 60 feet in height and bear from 1,000 to 2,000 fine oranges per tree each season. In all the woods and forests around here, oranges grow wild, the bitter Seville orange is the most abundant. The natives declare that the Valencia oranges were introduced by the Jesuits, but that the bitter or Seville orange is a native of this country, and was introduced to Seville, in Spain, by the same agency many centuries ago.

Situated in the corner formed by the meeting-point of Misiones with Brazil and Paraguay, is one of the wonders of the world—the Iguassu Falls, a marvellous cataract supposed to equal Niagara, and almost unknown to the Old World.

Misiones and North-East Corrientes is adapted for many kinds of agricultural pursuits, including such crops as sugar-cane, tobacco, rice, maize, cotton, ground-nuts, many kinds of vegetables, and fibre-producing plants; while last, but not least, the orange and all varieties of citrus, and the Yerba Maté (Paraguay Tea). At the present time, there are thousands of acres of land being planted with citrus and Yerba Maté by several large companies, and also by the numerous English and German colonists.

Our average rainfall exceeds 80 inches per annum, and is fairly evenly distributed over the whole year, and the climate is very healthy. Our hottest months are December, January, and February, when the thermometer reaches 100 deg. F. in the shade almost every day. The nights generally are cool and mosquitoes are comparatively few and are little trouble to settlers. The woods and forests abound with all sorts of luxuriant growth; orchids are numerous, and climbers hang from almost every tree, while the banks of the streams are clothed with masses of *Adiantum sp.* The flora of this region is very varied, and I hope eventually to make collections of seeds in the near future and send them to Kew.

A variety of animal life is found in the woods, the most notable being two kinds of Deer, a small black Monkey, the Lynx and Puma, the latter never interfere with man. The wild South American ostrich is a familiar bird, and is to be found roaming through the settlements; these birds do much good, as they live on snakes and do very little damage to crops.

Before going further with this article I shall give a brief description of the Yerba Maté and its properties, method of preparation, etc.

Yerba Maté is the national beverage of South America, and it is to be hoped that it will be taken up all over the Old World in years to come, even if only on a small scale, on account of its health-giving effect on the human body. Yerba Maté in its infused state is, to a great part of South America, what tea is to England. The tree is a member of the *Ilex* or holly family. In form and foliage it resembles an orange tree, though larger and with more numerous leaves and twigs. Yerba Maté contains very sustaining properties and is looked on as the beverage of over 40 million of the healthiest

people in the world ; it is also a well-known fact that this habit of Yerba Maté drinking has been the means of reducing to a very low level the amount of intoxicating liquor consumed in the Argentine and South America generally.

Recently, I noticed the following article about Yerba Maté, written by Dr. Lenglet, Vice-President of the French Pure Food League, who commented as follows :—"The most noteworthy feature of Maté is its stimulating effect on the whole cerebrospinal and allied systems. Taken while still fasting in the morning, it produces a feeling of general good health ; it increases the body's resistance to fatigue, and quickens the brain. . . . Maté is the most interesting and characteristic natural product which mankind possesses, enabling him to make full use of his latent energy."

Yerba Maté has the effect of acting in the same way as vegetables on the human body, having slightly astringent properties. At the present moment very large plantations are being planned, but many years must elapse before the home product proves sufficient to supply local demands. The large proportion of Yerba consumed in the Argentine is imported from Brazil and Paraguay.

Maté, or Yerba Maté is the usual Latin-American term given to the infusion prepared from the dried and macerated leaves of *Ilex paraguayensis*. The word Maté is taken from the Guarani language, which means a calabash or gourd, and the word Yerba is Spanish for herb. The connection being in the fact that from early times the infusion has been prepared in a small vegetable gourd. In preparing the Yerba Maté, the main principle adopted is as follows :—A small quantity of the "tea" is placed in the narrow-mouthed gourd, and hot, but not boiling water is then poured on it. The infusion is then imbibed through a cane or silver tube, with a strainer at the end, in order to prevent the smaller particles of the crushed leaf from entering the mouth. The gourd can be filled several times with water before all the strength is extracted from the leaf. The cane or silver tube used for sucking the Maté through is known throughout South America as a bombilla. *Ilex paraguayensis* is indigenous to the country drained by the Para and Paraguay Rivers, and was first discovered in the depths of the vast forests of Paraguay and Brazil, where it often attains the proportions of a fair-sized tree. The plant has greenish-white flowers, small and somewhat insignificant, with a calyx of five petals, which, in due course, give way to berries about the size of currants of a bluish-black colour when ripe, each containing four very hard seeds. Before sowing the seeds it is necessary to free them from the pulpy matrix ; this is readily done by leaving them in a rot-heap for several weeks turning them at frequent intervals to prevent fermentation. The seeds are sown in beds of light compost and kept moist and warm for several months, as the seed takes from four to six months to germinate even under very warm and advantageous conditions. When the seedlings attain a height of about two inches and show four rough leaves, they are pricked off into beds in the nurseries at from eight to ten inches apart and are shaded from the hot sunshine by means of a roof made of sticks and covered with bamboo

laths or canvas. Gradually, as they start into more robust growth, they are accustomed to more vigorous conditions, until they are about one foot high and have formed five to eight branches and a short trunk, when they are ready to be moved into the plantations; this generally occupies a period from nine to twelve months, according to the rate of growth made by the plants themselves. The young plants are planted out in triangular settings of about four metres pitch, thus providing three crossing avenues of the same width, affording every facility for the thorough utilisation of the plough and the disc harrows in cultivating the ground and keeping it free from weeds. The main object in the cultivation of Yerba is the production of a heavy crop of strong leaves and young twigs.

The trees are ready for the first cropping either the fourth or fifth winter after planting out in their permanent positions, when they usually produce an average of from $\frac{1}{2}$ to 2 kilogrammes of dried leaf and young twigs per tree, and if properly pruned and cultivated should increase by 40 per cent. per annum for at least the following fifteen years.

Planting is carried out in the harvest time, beginning in April, and if the weather is favourable, continues until September. For removing the plants from the nursery beds to the plantations, "planting tubes" (zinc cylinders) which are about six inches in diameter and open at one side are used. These are pushed down into the soil over the plant and surrounding it, and are then withdrawn with the plant inside. The plants are then packed in boxes and loaded on to mule carts for transport to the plantations. During the 1927 season, we planted out 350,000 trees from early April until August 15th; our average per week-day, excluding really wet days was about 4,000 trees. Another method of transplanting the Yerba trees from the nurseries to the plantations, which I have lately introduced, is by means of raising the young plants in "pots" made from a compost of fibrous loam, cow manure, and chopped hay. So far this method is giving excellent results and is being taken up by other planters. When these pots are properly dry they are as hard and durable as ordinary horticultural pottery. The pots are sunk up to their rims, pot to pot in the nursery beds. They are then filled with soil and the young seedlings are pricked off into them; after a few months the roots of the young plants find their way through the sides of the pot, which by this time has become softened in the moist earth, and when transplanting time comes around, the plants are simply lifted with a spade. The pot by this time has become matted with fibrous roots and in this way we are able to lift the young plants with a ball of soil and so our losses are minimised by ensuring little damage to their root system. I first saw this system practised on a small scale when learning the first principles of gardening, near Dublin, in 1915, and I gladly pass on this idea in the hope that it may be of use to other Kewites who are faced with the problem of raising large collections of plants which, under ordinary conditions, resent transplanting, or in localities abroad where the ordinary horticultural flower-pot is considered a luxury.

Until quite recently curing methods have been very primitive, but to-day this question is receiving the most scientific study and experiments are being made in various centres with the object of ascertaining the best machinery, etc. that can be employed for cropping and curing, and in particular attention is being paid to methods calling for a minimum consumption of wood fuel. The average consumption of wood fuel at the present time that is necessary to prepare 1 kilogramme of dried Yerba Maté is four-times this amount.

The methods of pruning practised in this country have proved very destructive, and the work has, up to the present time, been left entirely in the hands of the native Indians, who just saw and lop off big branches from the trees, often leaving but bare stumps. Consequently these trees have become infested with bark beetles and wood borers, brought about by the low vitality of the plants. My work has been to introduce and train the natives on our plantations to follow a new system of pruning and tree formation; also to have the trees sprayed as a preventative measure against leaf-curl, aphides, and bark beetles; the results so far are highly satisfactory and the next harvest should double the present season's output, which amounted to over 250,000 kilogrammes.

The pruning and collecting of the leaves and young twigs is carried out in the winter months (June to August), when the leaves are mature and the sap down. They are carted to the drying stations, where the smaller branches undergo a rapid and superficial drying in the heat of a clear smoke-free fire, an operation calling for much skill and experience, for leaves carrying any moisture on the epidermis rust within a few hours, whilst those which have been excessively heated, blacken and are quite useless.

The small twigs and all the leaves are stripped from the large branches and are subjected to a very thorough drying process, amounting almost to desiccation. For this purpose, they are spread over a light framework, through which the hot fumes from a steady fire are conducted. The firing is done in a hole in the ground about ten to twelve metres away from the framework, known as a "Barbacua," the hot fumes being conducted thereto through a tunnel, with appropriate care and devices to arrest any stray sparks en route. The Barbacua is usually erected dome-shaped by means of thin saplings rising from about one metre from the ground round the periphery to three metres in the centre. The leaves and smaller twigs are then spread over this framework to a depth of about twelve to eighteen inches, and are turned at intervals to ensure that they are dried equally by the hot fumes coming from the tunnel. Complete dryness is gauged by the brittleness of the small twigs, while the leaves are also brittle and a dull sage-green in colour. They are then ready to be crushed previous to storage in airtight drying rooms, in which they remain for some months to undergo a process of natural fermentation. The final process is one of grinding or milling, when the leaves and twigs are reduced to a fine powder mingled with a proportion of short, dried sticks or twigs, which thus constitutes the Yerba Maté of commerce.

A. A. CAVANAGH (1927).

PLANT COLLECTING ON THE SOUTHERN ALPS
OF NEW ZEALAND.

ONE of the greatest pleasures of travel to Nature-lovers, is the sight of plants growing in their native habitats. One and all of us have derived pleasure at all times in seeing plants of other climes thriving under cultivation ; but much more enjoyment is experienced in finding them in the locality in which they and their predecessors have lived and fought their life battles without the interference of Man.

For many months after my arrival in New Zealand, I had heard of the wonderful mountain scenery and the beauties of the mountain flora of the Southern Alps, and therefore, when the opportunity presented itself of a week's trip to the Routeburn Valley, in the heart of the New Zealand Lake District, I accepted it with alacrity. Unfortunately, however, Easter-time is too late in the season to see mountain plants in flower ; but it is an ideal time for plant collecting, which was the chief object of my visit.

The first part of the trip was occupied by two days uninteresting rail and steamer journey, before we reached really interesting surroundings. The first day took us to the shores of Lake Whakatiptu, and the second to the head of the Lake.

Lake Whakatiptu occupies a huge "S"-shaped valley, 50 miles in length, surrounded by mountains which rise from 6,000 to 8,000 feet in height. When we started off for the head of the Lake, the conditions were ideal, but before reaching our destination a storm broke over us, and our steamer, the "Mountaineer," floated about like a cork, being severely buffeted by the huge waves. We arrived at our destination several hours late, and as the rain was still falling in torrents we were compelled to shelter at a nearby farm for the night.

Dawn brought with it a welcome change, following a glorious sunrise over the tops of the snowclad mountains, which had been shrouded in heavy mists the previous day. We were driven some twelve miles in a buggy ; the air was bracing, and in the brilliant sunlight snow-clad mountains were visible in every direction. After some two hours driving we reached the fringe of the Beech Forest. The vegetation here consisted of pure stands of *Nothofagus*, chiefly *N. fusca* and *N. Menziesii*. This was the first primæval forest I had ever seen, and it was a sight never to be forgotten. The *Nothofagus* forest is very different from the "bush," which consists of various genera growing together with creepers and lianes, such as *Rubus australis*, *Muehlenbeckia adpressa*, *Rhipozonum scandens*, etc., forming a densely matted tangle of vegetation, while the undergrowth is usually made-up of many ferns, and epiphytes are not uncommon. In the *Nothofagus* forest, only one, two, and occasionally three species of *Nothofagus* are present, while the undergrowth consists for the greater part of young *Nothofagus* trees, and only one fern, *Polystichum vestitum*, is at all common.

The Routeburn Valley has been set apart by the New Zealand Government as a Scenic Reserve, and a hut has been provided for the accommodation of tourists, the furniture consisting of sleeping bunks, a table and a fireplace; so that it is necessary to carry all food, etc., from Lake Whakatipu.

The mountain sides are clad with pure *Nothofagus* forest up to an altitude of from 3,000 to 4,500 feet; the only other shrubs to be found are *Olearia arborescens* and *Plagianthus Lyallii*, which grow near the watercourses. At Easter-time, it is quite an easy matter to pick out the water-courses, as the autumn tints of *Plagianthus Lyallii* are very noticeable.

Above the forest, one finds a belt of shrubbery consisting of *Dracophyllum longifolium*, *Senecio laxifolius*, *S. robustum*, *Veronica spp.*, *Olearia spp.*, including *O. ilicifolia*, *O. arborescens*, and their supposed hybrid *O. macrodonta*.

When this shrubbery belt has been passed, the Alpine meadows for which New Zealand is famous, are reached, and it is here that the choicest gems of the New Zealand flora are to be found. In the bogs, strange little species of *Caltha* are observed, together with herbaceous *Senecios*, including *Senecio Lyallii* and *S. scorzonoides*, *Celmisia bellidioides*, etc. In the dry meadows *Ranunculus Lyallii*, *Ranunculus Buchanani*, *Celmisia coriacea*, *Ourisia spp.*, *Gentiana bellidifolia*, *Aciphylla Collensoi*, *Ligustrum antipodum*, and many other species of *Celmisia* and *Ranunculus* abound. As the ascent of the mountain range continues, the mat-forming plants become more conspicuous, in particular such as *Celmisia argentea*, *Raoulia Buchanani*, etc., while numerous species of *Gentians*, *Wahlenbergia saxicola*, and other familiar plants are met with.

In the rock crevices at higher altitudes one finds *Geum parviflorum*, *Aciphylla multisecta*, *Veronica spp.*, and *Leucogenis grandiceps* (the New Zealand Edelweiss).

At the conclusion of our foray, we returned to Dunedin very satisfied with our spoils which have since been planted in the native garden, and already, with the return of spring, are becoming established in their new surroundings.

A. W. ANDERSON (Dunedin, N.Z.).

"ABURI," THE BOTANIC GARDENS OF THE GOLD COAST.

THE number of Kewites that have been in the service of the Gold Coast Colony, particularly the Agricultural Department, is no meagre one. Many have spent long years of service in the Colony and have been largely responsible for the building up of the agricultural prosperity that the Gold Coast enjoys to-day. The European personnel of the Agricultural Department is represented at the present time by some thirty or forty officials, and of the agricultural provincial superintendents, three are Kew-trained men.

Kewites who have been engaged in agricultural and horticultural work on the Gold Coast and have been, for the most part, closely associated with the Aburi Botanic Gardens, the subject of this article, include Messrs. T. W. Brown, A. B. Culham, Dr. T. F. Chipp, G. H. Eady, A. E. Evans, W. C. Fishlock, C. H. Humpries, T. Hunter, W. H. Johnson, A. C. Miles, W. H. Patterson, Mrs. W. H. Patterson, Messrs. S. T. Phillips and M. Vardy.

The Aburi Botanic Gardens are situated on one of the highest points of a range of hills, some twenty miles north of the sea coast. A main motor road now connects Aburi with Accra, the chief seaport town and administrative centre of the Colony. The Gardens were first established in 1890, during the Governorship of Sir William Griffiths for the purpose of introducing and testing plants of economic value and interest from other tropical countries. The establishing of a botanical garden or experimental station of this nature had been suggested and under consideration many years previously, but it was not until this period that the proposal actually took effect. Plant introduction has continued to be one of the main functions of Aburi ; it has acted also as a source of supply for seeds and young plants for the rest of the Colony. Many of the parent plants of introduced trees now established in various parts of the Colony are to be found in these Gardens. Mention need only be made of the first Para Rubber trees to be introduced to the Colony, which were established at Aburi and still exist in a thriving and healthy condition. Cocoa, which is to-day far and away the most important crop of the Colony, was first tried out and established on plantation lines in the grounds of these Gardens, where plots of all the more important varieties became established. What is reputed to be the oldest native cocoa farm in the Colony lies but a few miles north of Aburi.

Apart from its role as a botanic garden, Aburi served, no doubt on account of its extensive nature and ideal situation, as the first agricultural experimental station. It was for many years the Headquarters of the Agricultural Department, but of late years these have been transferred to Accra, and an Agricultural Research Branch of some five or six officers, with laboratories and housing accommodation, have been established in the central portion of the grounds. During the latter portion of last century a large sanatorium was erected (thanks to the bounty of Queen Victoria) within the grounds for the benefit of officers recuperating from the more trying and low-lying coastal districts. Though little used now as a sanatorium, the building is kept in a good state of repair and serves as a Government Rest House. It is much appreciated by Europeans at Accra and other centres, who regard Aburi, with its demure and peaceful surroundings, its abundance of fresh fruit and vegetables, and cool evenings, as a popular week-end resort.

The main entrance to the Gardens is by a wide avenue of stately Royal palms (*Oreodoxa regia*), which leads to the residential quarter. This palm, which is native to Central America, has been found to thrive in most parts of the Gold Coast, and, no doubt, on account of its handsome appearance, regularity of growth, and clean ash-grey

boles, has become very popular for avenue purposes. Various other introduced and ornamental palms are established in the form of a palmetum on a portion of the main lawn in front of the Rest House; amongst these are to be found species of *Arenga*, *Areca*, *Phoenix*, *Caryota*, *Sabal*, and *Borassus*. Several varieties of the West African oil palm (*Elaeis guineensis*) exist in a separate plot. These varieties are commonly known by their native names, and differ from one another only in fruit characters, notably in colour and in thickness of pericarp and shell. The most interesting of these varieties is one which bears a fleshy sheath or envelope on each fruit, due to the development of six accessory sterile carpels in the flower. This sheath contains the same percentage of oil as does the pericarp, and as the fruit which it surrounds bears normal pericarp and kernel, this variety is considered one of the most promising for commercial purposes.

A wealth of flowering trees and shrubs is to be found in various parts of the Gardens, particularly on the slope facing south-east and adjoining the main avenue. The West Indian Lace-bark tree (*Lagetta lintearia*) flowers freely at certain periods of the year, its sprays of fragrant white flowers being much appreciated as a table decoration. The "Pride of India" (*Lagerstroemia flos-reginae*), no doubt one of the most strikingly showy of tropical flowering trees is a mass of mauve when in bloom. While hardly less attractive is the "Pudding-Pipe" (*Cassia fistula*) with its pendulous racemes of bright yellow flowers, giving rise later to the long brown pods, up to two feet in length, so characteristic of the tree. Other flowering *Cassias* are present, the most showy being, perhaps, *Cassia javanica*; also several showy species of *Bauhinia*, both native and introduced. The most showy of these is perhaps *B. tomentosa*, while the native *B. reticulata* is of interest on account of the medicinal and other uses to which it is put by natives in West Africa. The "Flamboyante" (*Poinciana regia*) does not appear to flower to its best at Aburi, more effective displays of bloom being noticeable in the open country of the plains. The smaller *Poinciana*, however (*P. pulcherrima*) flowers to perfection in the Gardens. Both red and yellow-flowered forms are present and flowering of this species is more or less continuous throughout the year. *Solanum macranthum*, a tree of some 20 feet, at Aburi, produces its clusters of large, blue flowers generally at the close of the dry Harmattan season (March to April), whilst its near relative, the "potato creeper" (*Solanum wendlandii*) grows well in the Gardens; in fact, so much at home is it that well-grown flowering specimens have been observed growing amongst the scrub of two or three years growth in discarded native food farms. Whether these plants owe their origin to cuttings having been put in by former occupants of the farm, or whether to natural agencies, such as distribution of the seeds by birds, is not definitely known, though the latter would seem to be by far the more probable, particularly in view of the bright red appearance and succulent nature of the fruits. Among other introduced ornamental trees is the "calabash tree" (*Crescentia Cujete*), with its conspicuous gourd-like fruits, and the "candle tree" (*Parmentiera cereifera*), the fruits of which are long and pendulous and hang generally in yellow

clusters from the stem. Fine specimens of the "temple tree" (*Plumeria acutifolia*) with its highly-scented white flowers, and of the pink-flowered variety (var. *rubra*) exist at Aburi, and are to be met with, in fact, in many parts of the Colony. The "madre tree" of South America (*Gliricidia maculata*) which strikes so readily from large cuttings and stakes, and proves useful as a quick-growing shade tree for young cocoa, is noticeable on account of its graceful feathery foliage and mauve flowers. Specimens of *Ravenala madagascariensis*, the "travellers tree," have been established on the main lawn of the Gardens, and, though attractive with their peculiar fan-like habit, have the drawback of collecting and retaining rain-water in the sheathing leaf-stalks and thus not infrequently become infested with mosquito larvae.

One of the smaller avenues of the Gardens is lined with *Casuarina equisetifolia*, the "beef-wood tree" or "she-oak"; remarkably quick growing, but inclined to lose its ornamental appearance with age. *Michelia Champaca* has also proved successful as an avenue tree and flowers and fruits in abundance. A species of Australian *Eucalyptus* has been successfully raised in the Gardens, and specimens 30-40 feet high exist, but have not, to the writer's knowledge flowered.

Indigenous West African flowering trees and shrubs of ornamental value are well-represented at Aburi. One of the most striking is undoubtedly the "African Tulip Tree" (*Spathodia campanulata*). This is quite one of the common species in the secondary forest surrounding Aburi, and may attain to a height of 60 feet or more. The flowering period appears to be rather prolonged, in most areas flowers appearing from September to May. The large, tubular flowers, a bright red-orange, are borne in dense clusters at the ends of the branches and form, from a distance, a splendid contrast with the dark foliage and smooth white trunk of the tree. Other Bignoniaceous trees, striking when in bloom, are *Stereospermum Kunthianum*, bearing rich apple-like blossoms, very strongly scented, and *Newbouldia laevis*, flowering at Aburi generally during February and March. The "sausage tree" (*Kigelia pinnata*) with its gigantic oblong grey fruits, hanging from cord-like stalks often several feet in length, always proves an object of interest to visitors. The *Mussaendas*, notably *Mussaenda erythrophylla* and *M. tenuifolia*, with their bright-coloured bracts, are amongst the most showy and decorative of West African plants, and when cultivated as shrubs and subjected to occasional pruning, as is done at Aburi, show to far better effect than when allowed to retain their natural semi-scandent habit. *Mussaenda erythrophylla*, which bears a scarlet bract three to four inches long, is commonly known on the Gold Coast as "Ashanti Blood," a reminder of the warfare and bloodshed that took place so continuously in the early days of the Colony before British administration held sway. The possibility of crossing this species with the closely-allied *M. tenuifolia*, which has a creamy-white and slightly smaller bract, suggests itself as well worthy of a trial, as forms with variegated bracts might be obtainable. As the *Mussaendas* strike readily from cuttings there

should be no difficulty in retaining the characters of interesting hybrids. Natural hybrids of these two species are not likely to be encountered, as the two species are seldom, if ever, found growing in the same locality in the wild state.

Many species of *Clerodendron* occurring wild are worthy of more general cultivation as garden plants in West Africa. The majority are woody climbers or scandent shrubs, and the clusters of white flowers of such species as *Clerodendron capitatum*, *C. Bucholzii*, *C. sinuatum*, have their merit further enhanced by their fragrance. A species of fairly wide distribution is *C. splendens*, most ornamental with its panicles of bright red flowers.

Among indigenous Leguminous trees, *Milletia Thonningii* is very Wisteria-like when in bloom, the pendulous clusters of mauve flowers appearing generally before the leaves. Variation in the shade of the flowers of trees growing under different conditions seems to exist, some trees producing flowers of a markedly darker hue than others. *Lonchocarpus sericeus*, a small tree of rather similar habit, also bears mauve flowers, but is considerably less attractive. The interesting liane, *Entada scandens*, the "sea-bean," though not represented in the Botanic Garden at the present time, is occasionally to be found in the neighbouring forest, climbing over tall trees and producing its hard woody pods a yard in length and four to five inches across. The mahogany-brown seeds are used as a fetish by some tribes, but are frequently made into ornamental articles, such as snuff-boxes, spoons, etc.

Three species of *Strophanthus* (African arrow poison) are cultivated at Aburi, viz: *S. gratus*, *S. Preussii*, and *S. hispidus*, all of which are handsome flowering plants, apart from their medicinal and economic value. The last-mentioned flowers profusely and is a pretty sight when in bloom, owing to the long wavy petal appendages, which hang down from the flower clusters in the form of lax tassels. In spite of profuse flowering, fruit of this species is seldom set at Aburi, probably on account of attack from "cocoa mosquito." The Akee Apple, *Blighia sapida*, a favourite native village shade tree, is probably to be seen at its best as the fruit ripens, for at this period it turns from pale yellow to a bright orange. The large, creamy-white arillus in which the seeds are set is edible, and very palatable when properly cooked; though care has to be exercised to use only fruits at the right stage of maturity, as others are likely to prove unwholesome.

The "silk cotton tree" (*Eriodendron anfractuosum*), "monkey kola," (*Carapa guianensis*), "hog plum" (*Spondias lutea*), "West Indian Cedar" (*Cedrela odorata*), "balsam tree" (*Myroxylon Toluifera*) and *Cynometra trinitensis* are all represented by fine well-grown trees. These are all, with the exception of the two first-mentioned, introduced. A fine old silk cotton, a relic of the original forest, is situated on the lawn in front of the Rest House; for the presence of this, thanks are due to those responsible for the first clearing and laying-out of the Gardens. A photograph of the base of this tree is shown and gives some idea of its dimensions. The "miraculous berry" (*Sideroxylon dulcificum*) which grows to a

large shrub or small tree, at Aburi, is remarkable in that its juicy red fruits when eaten have the property of imparting a peculiar sweet taste to everything that is eaten, however sour, for some considerable time afterwards. Other indigenous small trees and shrubs of ornamental value are *Honckenya ficifolia*, *Cnestis ferruginea*, *Mareya spicata*, *Ochna multiflora*, *Picralima klainiana*, *Myrianthus arboreus* and *Sarcocephalus esculentus* the "negro peach." *Picralima klainiana* is of additional interest, on account of the alkaloid contained in the seed which gives promise of becoming of therapeutic value. The medicinal value of this plant is well-known amongst the natives, a concoction from the fruit being employed as a febrifuge. Trees heavily in fruit present a handsome spectacle as the large ovoid fruits assume a yellow colour on ripening.

In addition to cocoa, plantations of Hevea and of Funtumia rubber (*Funtumia elastica*), of Cola (*Cola acuminata*), and a small stand of "Divi-Divi" (*Caesalpinia coriaria*) are run by the garden Staff. There are also numerous other plants of economic value, firmly established in the grounds, from which will be available material for more extensive cultivation in the Colony should this be desired from time to time. Among the spice and oil-producing plants are the "West African Nutmeg" (*Monodora Myristica*), "Shea Butter" (*Butyrospermum Parkii*), "Douba" (*Calophyllum inophyllum*), "Krobonko" (*Telfaria occidentalis*), "Wild Melon" (*Citrullus vulgaris*), Camphor, Cinnamon, Pimenta, Ginger, Pepper, Guinea Grains (*Amomum melagueta*), Citronella, Lemon, and Khus-Khus Grass. Medicinal and dye plants are represented by Cocaine (*Erythroxylon caco*), Croton (*Croton Tiglium*), Castor Oil, Annato, Logwood, Camwood, and Indigo. Among fruit and food plants, mention might be made of the Avocado, Paw-Paw, Banana, Citrus fruits, Mango, Guava, Mammea Apple, Souari Nut (*Caryocar nuciferum*), Grenadilla, Passion Fruit, Pomegranate, various Anonas, Sapodilla Plum, Rose Apple (*Eugenia Jambos*), Bread Fruit, Carambola (*Averhoa Carambola*), Arrowroot, Cassava (several forms), Hausa Potato (*Coleus tuberosus*), Sugar Cane, Sweet Potato, Dasheen, Yams, Ground and Tiger Nuts, etc. Many of the common more temperate vegetables, such as tomatoes, cucumbers, lettuce, carrots, turnips, onions, and various beans grow moderately well and are more or less in continual cultivation.

As in all tropical botanic gardens, the weed problem is one of the most troublesome that has to be faced, particularly during the long rainy season. Nut Grass (*Cyperus rotundus*) with its hardness and rapid rate of spreading is undoubtedly the worst weed present, and has, according to a resident of long standing, only become serious as a weed at Aburi within comparatively recent years. *Hillieria latifolia* is a common herbaceous weed in cocoa plantations and other well-shaded situations; so also is the pink-flowered *Talinum triangulare* which is incidentally a useful spinach plant. Among other common herbaceous weeds mention might be made of *Ageratum conyzoides*, *Synedrella nodiflora*, *Euphorbia prostrata*, *E. heterophylla*, *Boerhaavia repens*, *Bidens pilosa*, *Physalis minima*, *Lactuca taraxacifolia*, *Ancilema beninense*, *Aerva lanata*, *Argemone mexicana*, *Portulacca oleracea*, *P. quadrifida*, and *Achyranthes aspera*.

Gramineaceous weeds are represented by Lalang Grass (*Imperata cylindrica*), not a serious pest at Aburi, though troublesome in parts of the Colony, particularly coastal cocoanut plantations; *Paspalum conjugatum*, *Roetboellia exaltata*, *Echinochloa crus-gavonis*, *Oplismenus hirtellus* and *Centotheca lappacea*; the last-mentioned aggravating when in fruit owing to the hooked appendages of the seed which cause it to irritate the skin and cling to clothing. Elephant Grass (*Pennisetum purpureum*) occurs at Aburi, and more or less sporadically in most parts of the Colony. It has proved troublesome and difficult to eradicate in certain cocoa plantations in British Togoland. The more woody weed species which do not become really noticeable until they have been in existence for some time, include many Malvaceous plants, such as *Sida rhombifolia*, *S. linifolia*, *S. carpinifolia*, species of *Abutilon*, *Wissadula* sp. *Urena lobata*, and others. Two species of Loranthus, *Loranthus bangwensis* and *L. incana* are to be found at Aburi, *L. bangwensis* being by far the more prevalent. Both attack trees of all sorts, both exotic and indigenous, but are, perhaps, most noticeably troublesome on cocoa, citrus, and Avocado Pear trees.

F. N. HOWES.

PORT SUDAN REVISITED.

(FROM THE "SUDAN HERALD," FEBRUARY 19TH, 1927.)

PORT SUDAN is one of the most maligned ports in the world. Before seeing it, listening to Anglo-Indians and others who had not visited the place from its earliest years, I expected to see a few galvanized iron and wooden shacks, with tumbledown native huts lining the harbour and a handful of Europeans listlessly carrying out their duties under the sweltering tropical sun; dragging out a weary existence amid the deadly morning and evening mists, with which the traveller in West Africa and Central America is familiar. An outcast outpost of Empire, where exiles were working out their penance for the sins they hadn't done!

Like the big majority of newcomers, I was agreeably surprised to find that Port Sudan was not a bit like that. Port Sudan, indeed, was a hundred-times better than I expected—even though it greeted me with the most thorough and rapid soaking by rain that I had ever experienced—an ironic reception for one who had travelled some 4,000 miles in search of a dry climate.

During a short stay that followed, I was more deeply impressed by the brains and ability which, in the space of a brief 20 years had transformed the tiny, insignificant Sheikh Barghut into the modern, up-to-date Port Sudan, with its rails running alongside the ships, its electric cranes, its modern coaling facilities, and its well laid-out quays.

The public buildings, from the handsome and imposing Mudirieh to the large business offices and the comfortable hotel, also tended to make one ask how all this had been done in such a short space of time, particularly in view of the fact that during a big slice of its existence the world had been torn by war.

Naturally, in a place where utility had been the first necessity, there were many things lacking. Vegetation scarcely existed, while the roads in places were worse than those one finds in Khartoum. Still, one persisted in wondering how it had been done.

RAPID DEVELOPMENT.—Revisiting Port Sudan, I can understand a little better how the transformation has come about, for even in the brief interval since my last visit, some fourteen months ago, I noticed surprising changes.

My first impressions on revisiting Port Sudan were scarcely likely to be too enthusiastic, for the train arrived at the darkest hour before the dawn; also, despite the fact that the dawn was chillier than had been experienced in Khartoum for some time, one felt the "stickiness" of the Port Sudan atmosphere. Nevertheless, on the drive down to the hotel, and from the hotel to the quays, one noticed signs of the rapidity with which improvements and extensions are being effected at this port. In the first place, it is with delight that the man used to Khartoum and sandy wastes that pass for most of its roads, treads the clean hard thoroughfares of Port Sudan, while motoring seemed far less like broncho-busting than is the case in the capital. The road conditions of Khartoum are certainly improving, but nothing like so rapidly as at Port Sudan. Naturally, the hard coral available helps matters there. At the quays one observes many improvements—the quay space is being extended rapidly and the development scheme seems well in hand. Port Sudan is wisely preparing for the development of the country's overseas trade.

To one who has spent many years at one of the world's greatest ports, it was pleasing to see the berthing of a vessel at Port Sudan, and to note the despatch with which this was accomplished; a tribute alike to the harbour and berthing authorities and the agents. Another big improvement, so far as passengers are concerned, is the new Customs shed. It is not only the roads to the quays and the quay themselves which show improvement; the signs of the port's active growth are discernible throughout the town.

The hotel has added a most comfortable annexe, with ceiling fans, bathroom, vestibule, and the small private verandah attached to each apartment. These amenities will be greatly appreciated by those who have to spend any time at Port Sudan during the hot weather.

A GARDENING MIRACLE.—If one were asked what was the greatest improvement effected in Port Sudan during the past year the answer would be, undoubtedly, the public gardens. Where a year ago one crossed an arid waste, now, by the wizardry of Mr. Sillitoe, one walks along flower and grass-bordered paths; trees and shrubs are making amazing growth, and Port Sudan, like Khartoum,

in years to come will have reason to bless the country's gardening expert as one of its greatest benefactors.

One comes away from Port Sudan firmly convinced that although Khartoum may remain the seat of Government, the future lies with Port Sudan.

A HOLIDAY IN THE TROPICS.

As briefly recorded in the 1927 issue of the *Journal*, the Trustees of the Chelsea Physic Garden very generously decided that I should be granted four months' leave of absence so that I should have an opportunity of seeing tropical vegetation growing in its native home, and the countries chosen for this purpose were Ceylon, the Straits Settlements, the Malay States, and Java.

Furnished with introductions, through the good offices of various friends, including Dr. A. W. Hill, I sailed, on December 3rd, 1926, in the "Morea," calling for a short time at Gibraltar, where one saw some of the wonders of the rock-fortress; then on into the port of Marseilles, to collect mails and other lading. This gave us an opportunity of seeing the sights of the town, and it was of interest to note, that the plane trees, which in London had been defoliated for some weeks before I left, were still carrying their leaves, which were quite green.

Proceeding, one passes between the islands of Corsica and Sardinia, on through the lovely Straits of Messina, with the Italian mainland on the one side and the Sicilian coast on the other, with their classic memories of Chabyis and Scylla and the more recent volcanic eruptions of Mt. Etna. Port Said was the next port of call, and here one begins to feel that one is nearing the East, because of the cosmopolitan characters of the people and the nature of the wares in the shops, all of which have much interest for anyone going East for the first time. Fortunately, we made the passage through that wonder of engineering triumphs, the Suez Canal, during the day-time, and were thus able to obtain some idea of the Arabian and Egyptian deserts, and their weird barrenness, relieved only by the beautifully kept control stations, and the Casuarinas, which are planted to prevent the sand blowing from the deserts into the Canal; and an occasional plantation of date palms. Our passage through the Red Sea was like a balmy summer day at home, with the most glorious, indescribable sunsets, and bright moonlight nights. Reaching Aden, we found that "wonder of wonders," rain, had fallen in the morning and was still visible in small pools in the shade of buildings; but in the open the sun had removed every trace from this "driest of all places," whose rainfall is but $2\frac{1}{2}$ inches per annum. There are, however, some very ancient reservoirs cut out of the solid rock, some six miles from the landing-place, which are well worth a visit. They furnish the only fresh water available. The drive to them takes one through the old Arab village with its unpleasant smells; but many picturesque scenes relieve the dry

arid monotony of the place, such as the camel packs with their burdens coming in from the Arabian desert ; the enticements of the money-changers ; and the number of beggar urchins who have been taught to chant that they " have no father and no mother," and in this way enlist sympathy.

Christmas Day was spent on board in the six days' run to Colombo, which was reached on the 26th, and here I was met by an Indian friend, who is now the assistant professor in botany at the University College, over which institution he conducted me. This is a growing up-to-date college, with excellent research and teaching facilities. During several days stay in Colombo, I was able to make visits to many places of interest, including the Museum, which is rich in old Buddhist antiquities ; in types of the industries of the country, and in examples of the fauna and flora.

The Victoria Park is well worth a visit from the horticultural point of view, and contains many interesting trees, such as a giant *Eucalyptus albus*, the endemic *Terminalia Thwaitesii*, large cinnamons, a fine *Casuarina equisetifolia*, and on a wild olive was the largest plant of *Vanilla* hanging from its branches that I saw out East. Clothing the stem of *Terminalia glabra* was *Pothos aurea*, which is a much-used plant for this particular purpose. Climbers, such as Bignonias, Allamandas, Bougainvillaeas and the beautiful *Antigonon leptopus*, are much used for making bright displays, and owing to the rich colouring of their flowers are very much admired. In the gardens, one of the most royal feasts of colours was given by *Spathoglottis aureus* and *S. plicatus*, which are used much as Pelargoniums are at home. *Vinca roseus* and its var. *albus* also make good bedding plants.

Mount Lavinia, once the Governor's residence ; now a hotel, was visited. This is seven miles south of Colombo, and on the way many pretty Singalese villages were passed, which gave one a good idea of the beauty of the country and its dignified inhabitants. At Mount Lavinia I made my first acquaintance with a cocoanut grove, the produce from which is such a source of wealth to the owners, and of much use to mankind generally.

From Colombo, I went on to Kandy, 75 miles distant, the mountain capital of Ceylon, which occupied a railway journey of four hours ; but the route followed is a most attractive one, owing to the constant change of scenery, from low country to the mountain zone of the Central province. The first part of the journey runs all the way through flat rice fields, which alternate with gentle knolls on which stand the residences of the native farmers or cultivators, surrounded by groves of plantains, jack fruits, and mangoes ; bending coconut palms contrasting gracefully with the beautifully straight and slim areca-nut palm and the elegant sugar palm, whilst here and there, an occasional glimpse is caught of the talipot palm, which has been described as one of the most noble objects in the vegetable kingdom.

About eleven miles on the route, on the right-hand side, the sugar loaf top of the celebrated Adam's Peak mountain comes into view,

rising to a height of 7,352 feet above sea-level and being the fifth highest mountain in Ceylon. Not long afterwards, the double-headed Alagalla mountain also shows itself, and the real climb now commences, and a second engine is attached to the train. The ascent is now 1 in 45, with curves round the mountain-side of 600 feet which, when you look out of the carriage-window, makes it appear as if the train was running in a circle. At this point, the journey is very slow, being at about 12 miles an hour; but this has its compensation, since you are able to take in fully the exquisite mountain valley, woodland and homestead scenery, and the view down into the famous Kandy Pass, one thousand feet below.

Conspicuous in the Dekanda valley below are the terraced rice fields and the silvery foliage of *Canarium zeylanicum*, while the purple-pink flower-spikes of *Lagerstroemia indica* attract much attention.

As the journey proceeds rubber plantations are now visible on the hillsides interspersed with delightful natural scenery, among which the waterfalls tumble and glisten in the bright sunshine and give a very cooling effect.

Finally, after passing over the bridge which spans the Mahaveli-ganga, the chief river of Ceylon, New Peradeniya is reached. This is the station nearest to the famous botanic gardens, which it had always been my ambition to see, and which was now to be realised.

Thanks to the kindness of Mr. Parsons, I was soon installed at the Government Rest House, just outside the Garden, and was soon in the gardens themselves on a tour of exploration. The first thing to attract me was the fine row of *Amherstia nobilis*, which borders the road opposite the Rest House, and which was in full flower—a sight never to be forgotten. The large oval bed just inside the entrance-gates was filled with Cannas and other bright-flowering plants. This bed had recently been cleared of a thicket of palms and other growth, giving a much better view of the long drive beyond.

The Gardens, which were opened in December, 1821, six years after the fall of the Kandyan Kingdom, are 146 acres in extent, ideally situated in a loop of the Mahaveli-ganga on undulating ground and beneath the shadow of the Hantane mountain and possess much natural beauty, besides excellent landscape work, which has been carried out by its several distinguished Directors, Thwaites, Trimen, Willis, and is now being continued under the Hon. F. A. Stockdale.

The early work was concerned with the introduction of plants of economic interest, and many of these old examples are still to be seen, such as the giant Brazil-nut tree, the first Para rubber planted in Ceylon, now a huge tree, fine old specimens of the nutmeg, 100 years old and still bearing fruit, cloves, cinnamons, Cassia-bark, West Indian mastic, and many others. Nearby is a younger collection of economic trees, which are making excellent growth, among these being a good plant of *Taraktogenos Kurzii*, the oil from which is now largely used for curing that dread disease of the East—leprosy.

Other interesting trees noted were, *Michelia Champaca*, the flowers of which are used for decorating Indian ladies' hair, and also as a Buddhist Temple flower; *Cananga odorata* (this tree 30 feet high) which produces a Chinese perfume; *Berrea ammonilla*, the trincomale wood, much sought after by cabinet-makers for its beautiful markings; *Diospyros Calamander*, yet another finely-grained wood; and *Mallotus philippensis*, with its weird corrugated stems, also much used as a timber tree.

Among large fruit trees was the fine specimen of the mango, 150 feet high; *Eugenia malaccensis*, the Ceylon apple; *Diospyros discolor*, the velvet apple; *Garcinia Zanthochymus*, the wild mangso-teen, and others too numerous to mention here.

The palm collection at Peradeniya is very rich in species and contains fine examples of the Talipot Palm, and the conspicuous sealing-wax palm *Cyrtostachys Renda*. There are also fine avenues of the cabbage and royal palms, but the latter appears to have reached its limit and shows signs of deteriorating. Simultaneously, with its work in introducing plants of economic value, the Garden has introduced and acclimatised the ornamental plants of other countries, and now contains a very rich collection of such plants which are grown exceptionally well and make brilliant displays during their flowering seasons. The climbing plants are a special feature here and are objects of great beauty. Among those specially noticeable at the time of my visit was the magnificent *Congea tomentosa*, which draped several trees with its long sprays of mauve-pink bracts; the well-known *Petraea volubilis*, *Odontadenia speciosa*, Allamandas, in variety, Bignonias, Thunbergias, Passifloras, and the lovely *Camoensia maxima*.

The famous Lotus pond was being cleaned out at the time of my visit, but it was easy to imagine how beautiful it must be from the many huge areas I saw of this plant when I reached the Malay States:

The Botanic Gardens at Peradeniya also contain a good collection of Conifers and these are constantly being added to by the energetic Curator, Mr. T. Parsons, whom I thank for much courtesy during my brief stay in Peradeniya. A visit was arranged by him to enable me to see the New Peradeniya tea and rubber estates, which are quite near the Botanic Gardens. Here, I was shown over the estates and saw the many different processes in the production of tea and rubber. Pepper and cocoa are also grown on these very progressive and up-to-date estates.

From Peradeniya to Nuwara Eliya was my next stage, and the train journey is one of great interest and beauty. The line runs through large areas of rubber, and the tea plantations now occupy mile after mile of the mountain sides. Many of the stations themselves, are real pictures of floral art; one, in particular had a fence clothed with *Ipomoea rubro-coerulea*, which was covered with flowers. Bougainvillaeas and Allamandas are also much used for this purpose. At Watagoda, *Datura suaveolens* had spread itself for some distance on either side of the station, and its white chalices were suspended

in profusion from its branches. Lantanas are also very common by the side of the line, and I was intrigued to see the Cuban hemp (*Furcraea gigantea*) growing apparently quite wild for several miles. This, I afterwards ascertained, was the remains of a concession granted by the railway company to a fibre company some years ago, during the fibre boom.

At the junction, Nan Oya, where the railway is continued by a toy line to Nuwara Eliya, I was met by Mr. Stockdale, and did the last part of the journey through the mountain pass by motor car. This ride is very beautiful. As it winds upwards, the roadside is full of flowering plants and masses of ferns. Here and there, standing out like sentinels, were giant *Lobelia nycotianifolia*, and large colonies of the Ceylon daffodil *Ipsaea speciosa*, interspersed with the beautiful gentianaceous *Exacum zeylanicum*, whilst in the sheltered nooks were the two native ferns, *Alsophila crinita* and *Hemetelia Walkeræ*. Nearer the top of the pass are numbers of *Rhododendron arboreum*, in two colour forms of flowers; and at Nuwara Eliya, this plant, which is found in abundance, makes a small tree, 30 to 40 feet in height.

Nuwara Eliya is 6,200 feet above sea-level, and is the health resort of the Europeans in the Colony. It stands in an amphitheatre of hills, and has a small park in which many subjects common to English gardens, such as sweet peas, antirrhinums, etc., are grown. There is also a fine avenue of *Cupressus macrocarpa*, and many of the Australian Acacias and Eucalyptus are to be found here.

Under the guidance of Mr. Nock, who has charge of this park, I also visited the gardens of Government House, and those of the Colonial Secretary. In these gardens, fresh vegetables, such as peas, cauliflowers, leeks, carrots and beet are largely grown. Flowers such as sweet peas, carnations, and many annuals are also grown in quantity, whilst the interesting *Diarema pulcherrima* was regarded as a weed, but was extremely useful for cut flowers. Here, like lower down, at Hakgala, the cut worm is very destructive to young seedlings, which have to be protected by means of paper collars.

The Hakgala gardens, where I spent two days with our friend, Nock, are six miles south-east of Nuwara Eliya on the Bandulla Road, and being 5,581 feet above sea-level, were started in 1861 as a hill station for growing Cinchona. The present area under cultivation is 55 acres, out of 500 which are available.

Facing due east, it has an imposing background; the Hakgala Rock, the highest of whose peaks rises some 1,400 feet above the garden. This rock, which can be climbed by passing through a jungle path from the top of the garden, is clothed with *Rhododendron arboreum*, and other vegetation. Several hours were spent in this jungle and it was a delight to see the wealth of mosses and small filmy ferns which covered the stems of the trees, and the carpeting *Selaginella brachystachys*. Several acres of the high ground above the garden proper are devoted to experimental work in acclimatizing exotic trees, which suggest timber possibilities, notably Australian Acacias, many of which make excellent growth. One

species, *Acacia melanoxylon*, is now the chief source of firewood, having been extensively planted on the hills about Nuwara Eliya.

Large tracts of grasses and fodder plants are also being tried for their suitability as fodder crops on the barren patnos.

To enumerate a tithe of the many interesting plants to be seen in the Hakgala Gardens would take too much space, but mention must be made of the collection of native plants which have been collected and have several beds given entirely to them. Among these I noted, *Ipsaea speciosa*, *Phaius Wallichii*, *Satyrium nepalense*, *Calanthe veratrifolia*, *Exacum zeylanicum*, *Lobelia excelsa*, *Impatiens Hookeri*, *Spilanthes Acinella*, *Viola serpens*, and the pretty blue Sinhalese skullcap, *Scutellaria oblonga*.

The fernery is a special feature of Hakgala, and contains excellent examples of the native tree ferns, *Alsophila crinita* and *A. glabra*, as well as the Australian *Alsophila Cooperi* and *Dicksonia antarctica*, the New Zealand *Cyathea dealbata*, and *Hemetelia Walkerae*, which is endemic to Ceylon.

There is also a rich collection of the varieties of *Begonia Rex*, which, in this moist climate, show how beautiful these plants can be. Returning to Nuwara Eliya, I went over the tea research station, which is under the control of Dr. Petch, and here I came across an old Imperial College man whom I worked with at Chelsea, and is now the Entomologist at this station. From Nuwara Eliya, I returned to Colombo and took the boat to Penang, some 1,255 miles distant.

At Penang, I was met by Mr. Flippance, who took me to Government House. Here I met Lady Guillemard, and was invited to spend the night at Bel Retiro, the Governor's Bungalow, at the top of Penang Hill, 2,600 feet up, and to meet the Governor, who had arranged with the Agricultural Department that I should be met by the various officers of the department at the points of call I was making during my stay in the Malay States.

The Governor's garden, at Bel Retiro, is not very large, but is well-kept and contains some very interesting things, and like the Waterfall Gardens, in Penang, is under the care of Mr. Flippance, who has carried out many improvements at both places. From this elevation the view across to the mainland of the Malay States is one of exquisite beauty, and since the construction of the funicular railway a few years ago, by which access to the hill is easier, it is now being developed into a health resort. It was on the top of this hill, near the Governor's Bungalow that I saw the rare *Nepenthes albo-marginata* growing in quantity, and many interesting ferns, such as *Dipteris conjugata* and several species of *Gleichenia* in profusion. Thanks to the kindness of Mr. Flippance, who sent up one of his staff as guide, I spent a morning in the jungle nearby, and although the path through this had been cleared the previous day, my companion had to make frequent use of his knife to again clear the way, so rapidly do things grow in this climate.

Near the pool in this jungle *Cypripedium barbatum* grew in quantity and many other Orchids were noted on the trees and flowering

plants of other kinds arrested the eye on all sides.

Descending Penang Hill I was met by Mr. Flippance and taken to the Waterfall Gardens, which have a beautiful setting, with jungle on either side, and contain a rich collection of plants of all kinds, reflecting much credit on those responsible for their upkeep. A plant of *Nepenthes ampullaria* growing at the base of a tree was the finest specimen of this interesting species I have ever seen and bore an unusually large number of pitchers. *Platyceirium grande* was also very fine on one of the trees.

The landscape work in the Penang gardens has been very well done and the best use made of the waterfall, which peeps out from the jungle on the hillside and is carried down through a series of bridges, which are in keeping with the surroundings, and then spreads itself out into wider channels which are planted on their sides with showy plants.

As a change from things purely botanical, I was taken to the races, where one obtained a good idea of an eastern holiday crowd, and visits were made to the native quarters of the town, where I was introduced to that weird subject, a Chinese theatre, when a terrific din produced by unusual instruments was the order of the day.

From Penang, I crossed to the Malay States, and took the train to Taiping, where I was met by Mr. Birkinshaw, who had mapped out an excellent programme for my stay in this most interesting town. This included visits to the mangrove swamps under the care of one of the Government forest officers, who showed us how valuable these swamps are from the revenue point of view, since no less than 580,000 dollars are obtained each year from the timber sold from them.

Motoring to Port Weld, we steamed to Tusan Tuna, where we were taken in a sampan to see a mangrove area regeneration, which was being checked by the growth of *Acrostichum aureum*. Coming back to our launch, we steamed down to the fishing village of Pasir Hitam, where we anchored and spent a most delightful night, sleeping on deck. Early the next morning we were ashore and passed through the village--which was a series of huts, where humans, pigs and fowls all occupied the same room, and timbers were laid in the centre of the "street" to prevent one sinking into the mud up to one's knees--to see a Mangrove formation, which had grown up in its entirety during the past 21 years. We then went to see a mature plantation, and as we passed the river in our sampan the banks were alive with the weird mud fish and other life. To get into this plantation we had to perform various gymnastic feats and several times landed in the mud up to our middles; but this is soon washed off in the warm river water.

Returning to our launch, we did justice to an excellent breakfast, during which we tried to steam away, but found we were on a sandbank, where we remained for an hour until the tide came up and released us. Later, we made for an area where felling was in progress. This is all done by Chinese contract labour, who have to

dig the canals for the barges which carry the timber away, and who also make the compounds in which they live during the felling of the area. Finally, we returned to our sampan, which took us to our launch, and we returned to Port Weld and saw the stacked timber ready for use.

The next day we made the ascent of Maxwell Hill, to see the hill flora and the health station, at which we spent the night in one of the bungalows. This station is at 3,600 feet elevation, and the eight miles of mountain pathway to it is of great interest owing to its extremely rich flora, details of which have been published in the March issue of the *Gardens Bulletin* of the Straits Settlements for 1925. No less than four species of *Nepenthes* were seen on our way up, besides large areas of filmy ferns which clothed the rocks on either side of the pathway, and in striking contrast were huge *Angiopteris* in the more open spaces, and other tree ferns, Genera such as *Chirita*, *Didymocarpus*, *Sonerilla*, *Aeschynanthus*, *Torenia*, and *Medinella* were common, and give some idea of the rarity and beauty of the flora. At lower elevations, *Gleichenias* grew yards long, and smothered everything with their delicate growths.

As in Ceylon, vegetables are largely grown at the hill stations, and at Maxwell Hill station a fine herd of cows are kept for their milk, and for the manure which is so necessary for successful vegetable culture.

The annual rainfall at Taiping is the heaviest in the Malay States, and this, coupled with the heat makes vegetation very rampant, and the epiphytic plants were finer here than those seen in other places.

From Taiping, Mr. Birkinshaw drove me to Kuala Kangsar, through a pass of much beauty with Malay compounds and many rubber plantations lining the roadsides. At Kuala Kangsar there is a research station, where many kinds of Pomelos and other crops are being tried. It was here, also, that the recent floods had done much damage and whole areas of pedigree rice plantings had been devastated. The river rose 73 feet in three hours!

My next stage was Kuala Lumpur, which, since the Federation of the Malay States, in 1896, has been the central seat of Government. Mr. Sands, who had organised my tour all through the Malay States, met me on my arrival, and during the whole of my stay here was extremely kind in taking me to various places of interest, besides giving me the hospitality of his delightful bungalow, near the offices of the Department of Agriculture. Surrounding this station is an area covered with experimental crops of many kinds, and adjoining are the Public Gardens, of some 300 acres, which are being rapidly developed into a most interesting and beautiful place. Clearings in the adjacent jungle have the trees properly labelled, so that visitors can, in this way, become acquainted with their native trees.

I was taken over the building set apart for the work of the Agricultural Department, and it was an education to note the

marvellous progress made in such a short space of time in the development of science as an aid to the work in the field. Here, there are sections, with their heads and staffs, dealing with problems which beset the planter, in economic botany, plant pathology, entomology, chemistry, and mycology. The growth of this Department necessitated further ground being acquired for experimental work and this is now provided at Serdang, about 12 miles out on the Sungei Besi Road. Six years ago this estate was pure jungle; now, however, over 700 acres are under a variety of crops, to the number of some 164, which may prove of use to the planter in place of or as subsidiary crops to rubber. Two old Kew men, Messrs. Milsum and Lambourne, who kindly took me round, are in charge here, and what impressed me most was the large area which has been brought under cultivation in so short a period, and the rapidity with which the crops had grown.

Klang Gate, with its interesting xerophytic flora at 1,400 feet, was visited. This is composed of quartose rock and on this *Rhododendron Tyesmaniana*, *Rhodaleia tomentosa*, *Baeckia virgata*, *Rhododendron longiflorum* and the endemic *Eulalia Milsumi*, were noted.

With Messrs. Sands and Milsum, a three-days' tour was made of Fraser's Hill, staying at one of the bungalows built at 4,000 feet or more elevation as a health station. This can be reached by a good car road which ascends to the summit. This road, however, just previous to our excursion had been quite impassable owing to the number of fallen trees which had been brought down by the recent floods; but by this time it had been cleared again. During a jungle trip, we had to proceed very cautiously over some of the recent landslides, for had we made a false move nothing could have saved us from being carried down many feet below.

The vegetation of Fraser's Hill is very remarkable, and old world types of vegetation are frequently encountered. *Nepenthes sanguinea* grows in quantity, both as an epiphyte on trees, suspended from the laterite walls of rocks or in the damp moss near streams in the jungle paths. The beautiful *Impatiens oncidioides* was also frequently met with in the latter situation. Space forbids the mention of other noteworthy plants, but a list of these has been published by Mr. Burkill, in the *Gardens Bulletin* of the Straits Settlements for August, 1923, which should be consulted for more detailed information.

The next two days were spent under the guidance of Dr. Foxworthy, who showed us some of his forestry work in Kepong, Sungei Buloh and Kanching forests, and it was a great pleasure to me to have Mr. J. G. Watson with us on the latter occasion, having just returned from relief work in the flooded areas. Forestry schemes in the Malay States are well-provided for under the skilful guidance of Dr. Foxworthy, who has built up a wonderful forestry museum at Kuala Lumpur, in addition to his many other activities.

From Kuala Lumpur, my next stage was Singapore, where I spent a delightful time with Mr. Best, who showed me the wonders

of the Botanic Gardens, which were described by Mr. Burkill in a recent issue of the *Journal*, and various other places of interest in and around this valuable outpost of the British Empire.

Forty hours' passage on a Dutch steamship took me to Batavia, the western port of Java, with its pretty river scenes and its delightful garden suburb of Weltevreden. This is the seat of the Dutch Government, and contains many fine Government buildings standing in flowery parks or gardens, in which Cannas are largely used for bedding purposes.

My next stay was at Buitenzorg, to enable me to see the world-famed gardens which contain the richest collection of plants of any botanic garden out East, and are especially rich in species of Orchids which are grown on the stems of *Plumieria alba*, which are planted in narrow lines with pathways between, so as to allow of inspection.

Special mention must also be made of the collection of palms, and the aquatics, which are an important feature and contain many rare plants.

As a scientific establishment, Buitenzorg ranks next to Kew, and it was a great pleasure to have the opportunity of visiting it and viewing its wonderful treasures, of which lack of space forbids description.

Before leaving Buitenzorg, I went to the tea estates at Tjiapoës. This took me through some picturesque scenery, with Mt. Gedah in the background, and Mt. Salak to the right. The tea is grown on the mountain slopes, from 1,600 to 3,500 feet elevation, and was very vigorous and healthy.

Journeying on to Garoet, the railway line, after curving round the slopes of Mt. Salak, runs through a hill region of tea, rubber and cinchona estates, with watered rice-fields breaking the level of the plains and valley, and their climbing terraces ascending to the very hilltops. After a further two hours' ride, the most picturesque part of Java, with a view over the Plain of Leles, was spread out before us. Later, on reaching Garoet itself, we found that the vegetation was so luxuriant that it was often only possible to see one house at a time, with the mountains towering high above.

From Garoet, I made a trip to the top of the volcanic mountain, Papandajan. The first part of the journey for 4,500 feet is made by car, while the final ascent to the craters, some 2,000 feet, is accomplished on the backs of ponies, through some of the most beautiful scenery and vegetation. Near the summit and right to the edge of the lava, the mountain-side is covered with *Rhododendron javanicum*, ericaceous plants, and temperate ferns.

The next stage of my trip took me to Djockja, in Central Java, and here one finds the old Japanese customs more rigidly adhered to than in other parts of the island, and it is the centre from which the old Buddhist temples, like Borubuddhar and Prambanan are visited, and I made visits to both of these ancient monuments, built during the 8th or 9th century. The former is the most beautiful of all Buddhist remains in Java, and is an enormous structure

built around a hill, the four galleries having carved panels, the carvings from which if placed end-to-end would reach for two miles.

On the 27 miles' run to this temple, large areas of sugar-cane and tapioca were passed, the latter then being harvested.

Finally, I went to Sourabaya, the largest commercial port of the Dutch East Indies, which is the centre of the great sugar trade. This city has a population of about 200,000, nearly 20,000 of whom are Europeans who live in delightful suburbs, surrounded by most beautiful gardens.

From Sourabaya, I took the boat again for Singapore, where, after staying a further four days, I took the homeward-bound boat for home, having spent a most enjoyable and profitable holiday.

WM. HALES, A.L.S. (Chelsea), 1927.

A FEW IMPRESSIONS OF PERSIA.

BAGHDAD, 3/4/28.

I PROMISED, before leaving England last September, to send you a scrape of the pen for the *Journal*; so here's a short screed, written at Baghdad, the "City of Arabian Nights," en route homewards to the Old Country. Kewites must be few and far between in the land of Omar Khayam. So far as I know, C. Matthews, Superintendent of Parks and Gardens for the Anglo-Persian Oil Co., at Abbadan, and myself, at present a bird of passage, are the only representatives of Kew in Persia.

And yet, this is the country where, if anywhere, are wanted men who can make two blades grow where only one grew before—and even that takes some finding at times. Persia is a land of contrasts and contradictions, the first, according to the Persians, that God made—obviously, with a "Prentice hand," as Burns would say. It is as impossible to imagine Persia from England, as for Persia to imagine England from here. Poets have often sung to the praise of Persian gardens; but one wonders why. So far as I have seen, they can, as a rule, only be called gardens as compared with their surrounding desert, as around a water spring where any form of vegetable-life affords a peculiar sense of pleasure.

You may gather from this that Persia is not exactly a gardener's or botanist's paradise; but rather a geologist's or an oil-driller's. Here, a botanist is regarded somewhat with contempt, being referred to as "chizzi-alaff," which signifies "an idiot concerned with weeds." The Persian language has no equivalent for "home," presumably because of the natural instinct of the people to wander from desert to mountain and caves, or vice versa, according as the season is hot or cold. Their nearest equivalent for "home" is *mensa*, which means a stage in the journey. As a matter of fact, caves, or semi-underground mud dwellings, with ventilation-holes rather than windows, are not to be despised in a country which claims the unenviable distinction of being, from May to October, the hottest in the world. A "Shabadan" or underground room, with brick

and plastered sides, and floor and ventilating shafts is preferred by some Europeans to an electrically-cooled modern drawing-room. Plants, too, acquire here the habit of seeking protection from the sun by burying their bulbs or tubers to an abnormal extent. Thus, eighteen to twenty inches is not an uncommon depth for tubers of Tulip, Muscari, Gladiolus, Crocus, etc. to bury themselves.

All deserts are not, of course, alike. One type consists of fine shifting yellow sand (common in Northern Africa). Another is mostly hard clay and sand, which when it rains (a rare event) becomes like a sticky mud and practically impassable, whilst in windy weather, which is common, it forms sand, or dust storms, the bane of man and beast, and especially of airmen. This type is common throughout Syria, Iraq, and South Persia, and when irrigated, as in the vicinity of rivers, may produce good crops year after year, without requiring manuring. Another type, common to Persia, is the salt desert, in which the ground is covered with a white snow-like deposit of salt (sodium carb.) making cultivation of any kind impossible. The barren desert mountains in the interior of South Persia are of the most remarkable and weird configuration. Rising abruptly from the desert the rock strata are clear cut and almost perpendicular, sometimes outcropping and appearing like enormous artificial walls. In the ravines and valleys, however, the ground, for one short month of the year, namely, from the beginning of April, is covered with a brilliant carpet of flowers, mostly of bulbous or tuberous plants, reds and yellows predominating, as is usual in the tropics. For the other eleven months of the year the ground is absolutely devoid of any vegetable life.

Thanks to the generosity of the Anglo-Persian Oil Company, which has done wonders for Persia, I am now on my way homewards again for the summer, doing the journey in stages—by air, desert motoring, sea, and rail. Flying over or visiting this region, the "cradle of the human race," with biblical landmarks, is not without a spice of thrill; or sometimes worse. One learns to respect the wandering Bedouins, and the lusty Jebel Druses, or, if possible, to give them a wide berth. These children of the desert, the survivors of the fittest, whose chief means of existence is by raiding and looting, with or without murder as the case necessitates, have changed but little since the days of the Bible. It is most essential that European newcomers should remember this, and not judge the people generally, as well as conditions of living, by Western standards.

I am writing this from Baghdad, having flown from Basrah by the Imperial Airways liner, "City of Cairo," a powerful 3-engined biplane, weighing, when loaded with mails and passengers, nearly eight tons. This portion of the route is rather notorious for air-pits and sandstorms, especially at this time of the year, which, perhaps, accounts for my having had the plane all to myself, except for the crew of three—pilot, engineer, and wireless operator. I leave to-morrow, for Babylon, once the "Mother of Cities," and the home of the famous King Nebuchadnezzar, in whose day, some 3,000 years B.C., the Moon-god Marduk was much worshipped. After that I leave by car for Damascus, across the Syrian Desert; then for

Baal-bek, Jerusalem, Bethlehem, etc., on to Egypt, and home.

I am greatly looking forward to seeing the chestnuts and the hawthorns in flower again and, above all, to revel once more in the glories of Kew. Britain, with all thy climatic imperfections, I love thee still, but more especially Kew.

H. F. M.

A YOUNG KEWITE'S IMPRESSIONS OF LA MORTOLA GARDENS.

I do not think it is generally realised the number of opportunities which are offered to the Kew Students. One (that of going to La Mortola) I was able to take advantage of, and the twelve months there was a unique experience.

It is thought, by many people, that horticulture on the Riviera is easier than in England, probably because of the exotic appearance of the plants when in bloom ; but even here there are many climatic difficulties to contend with. The climate of La Mortola is typical of the North Mediterranean. The summers are dry and rain falls from Autumn to Spring ; it is more plentiful during the three autumn months. Thunderstorms, though not frequent, may occur at any time. Generally speaking, the rainfall is irregular and three months may pass with little or no rain. The drought is often so bad that even fleshy *Opuntias* become shrivelled. No garden could exist under these conditions without an artificial water-supply, and this is provided by large tanks. Owing to the steep incline of the land, the benefits of the rainfall are still further diminished. The temperature is very much like that of South Africa—seldom rising above 88 deg. F., in the shade.

The south winds, which are frequent, play havoc with numerous plants, especially tender annuals, such as *Cinerarias*, *Primulas*, and often trees like *Cupressus sempervirens*. The winds which come from the Mediterranean are laden with salt particles and it is these which do the damage to the plants.

May is the ideal month for sowing seeds, and these are sown in frames and pans. They are transplanted into thumb-pots and during the month of June these are transferred into larger pots. The plants are grown on until September, when they are planted out in the open in a permanent position. *Cinerarias*, *Primulas*, *Cyclamen*, *Cheiranthus*, and *Antirrhinums* are a few of those which are treated like this.

Various decorative plants are propagated by means of cuttings, and include such subjects as *Buddleias*, *Bougainvillaeas*, *Salvias*, *Ageratums*, *Carnations*, *Tropaeolums*, and *Echiums*. The *Echiums* grown at La Mortola are thus propagated in order to perpetuate the fine strain, producing an intense blue during the flowering season. Succulents are one of the outstanding features in the Gardens, and are mainly natives of South Africa and South America.

Aloe spinosissima is, perhaps, the best of all Aloes for bedding purposes, on account of its dwarf habit, seldom exceeding one foot in height, and producing flower-spikes up to eighteen inches long surmounted by scarlet blossoms. *Aloe arborescens* var. *natalensis* is a very decorative plant and is especially fine at Christmas, bearing large spikes of blazing red flowers.

When Agaves are planted in groups, the effect is distinctly tropical, and the following have been employed with much effect:—*Agave Franzosini*, *A. ferox*, *A. lurida*, *A. mortolensis*, *A. coccinea*, *A. americana*, *A. Salmiana*, and *A. Victoria-Reginae*. The *Mesembryanthemum* collection is another very interesting feature and well worthy of the attention that is bestowed upon it.

There is very little that would attract the casual visitor to the Garden during the summer months. A botanical student would, however, find the various specimen plants and the collections of great interest. It is during the period September to April that the Garden makes its greatest appeal to visitors to the Riviera. The trees and plants are at their best during these months of the year and the attractive colour schemes lend a very natural aspect to the landscape; though it is a matter for conjecture whether visitors ever realise the forethought that is such an essential factor in obtaining such desirable results.

The lawns here have to be sown annually, as it is utterly impossible for them to withstand the drought during the summer months. The ground is prepared during August and following the first rainfall, the seed is sown. Within three weeks the lawns are quite green and it is then necessary to keep them well-watered. They are in perfect condition by Christmas, and many bulbous plants, such as *Narcissus*, Hyacinths, *Crocus*, *Iris*, *Anemone*, *Scilla*, *Ornithogalum*, etc., which were planted when the grass was first sown, should be in bloom, and give added charm to their surroundings.

Amongst the most striking and picturesque trees that bloom quite freely beside the blue waters of the Mediterranean may be mentioned, Acacias, Daturas, Caesalpinias, Callistemons, Wigandias, Paulownias, and many species of *Eucalyptus*. A few climbing plants might also be mentioned, such as Ipomoeas, *Bignonia venusta*, *Clematis Meyeniana*, *Clematis Armandi*, *Tecomaria capensis*, *Rosa Banksiae* and its varieties, and *Pithecoctemum muricatum*.

Yet another striking feature is that of a collection of Phoenix palms, planted on a sloping bank, with Arum Lilies (*Richardia africana*) as an undergrowth. It was among these that I found some small frogs, which, with the Director's permission, I brought back to Kew. These were placed in the various tropical houses, to the consternation of not a few of the fairer sex. One or two were not at all at home in the tropical pits, and, possessed with a spirit of adventure which, with the coming of a severe English winter they doubtless realised fully to their sorrow, they found their way to the water garden near No. 2 Museum, where they soon made their presence known to those who would take their evening stroll.

at sundown, by their curious croaking, which they kept up in chorus until a very late hour. It took my colleague (Mr. S. F. Ovenden) some months to get used to the croaking of these little fellows while at La Mortola, and it was often wondered whether these alone caused him to be afflicted with insomnia during his stay there!!! The blue frogs, seen by him at various times, were quite real, though I was unable to bring any back to Kew, and were not the result of any hallucinations following his sleeplessness.

We had plenty to occupy our leisure moments. The Library attached to the garden was open to us and when reading palled we were always certain of a good game of bridge with Mr. and Mrs. Braggins. It was owing to the motherly care that Mrs. Braggins bestowed upon us that made our stay at La Mortola the more enjoyable. Our open-air recreations included tennis, swimming and fishing. By fishing, I do not mean the rod-and-line variety of Isaac Walton, for we used to accompany the versatile Italian fishermen, who spear large fish, lobsters and octopi by the light of large gas flares.

Mr. and Mrs. Hanbury, who are the proud owners of what is the finest garden on the Riviera, take a real interest in their possession and spare no pains in ensuring that everything reaches a very high level of perfection. In their endeavours they have a valuable and energetic assistant in Mr. S.W. McLeod Braggins, whose architectural and landscape knowledge is displayed to the greatest advantage.

Provided that a Student is willing to "put his back into his work," his time at La Mortola should prove of inestimable value to him in his future career.

H. BRUINS-LICH (1928).

(Mr. Braggins has written the following note in response to many requests for a few lines from his pen.—*Ed.*)

FELLOW KEWITES,—Persuaded by Henry Bruins-Lich and others to make a few remarks, I very much doubt the advisability of breaking in on my past silence, but in doing so I would like to bring to your notice a few vagaries of climatic conditions which should dispel any illusions as to the Riviera climate being ideal from a horticultural point of view.

1926 left records such as 13 degrees below zero ; 2 inches of rain in 3 hours during a July day ; 15 weeks absolute drought under blazing tropical skies ; 37 days on which rain fell to the remarkable extent of $27\frac{1}{4}$ inches ; while the final total for the year 1926 reached the amazing figure of 61 inches ! Our record fall at one time, being 6.7 inches in 24 hours, on November 4th. Then, hailstones as big as Barcelona nuts, snow one inch thick and hurricanes of sufficient force to blow down olive trees hundreds of years old. Taking these extremes into consideration, you will readily understand that difficulties are encountered when arranging for a definite flowering period. Cultural systems, modes of propagating, watering, and the resting period of our subjects require getting accustomed to,

while from a student's point of view, the garden contains many unique specimens of succulents, trees and shrubs, an excellent library, and herbarium.

I will not attempt descriptions of scenes or colour arrangements or the quantity of plants required for certain plans, these had better remain as hidden numbers until disclosed at the inevitable lecture that is bound to follow a Kewite's visit to La Mortola.

Many of you have given Mario friendly help socially ; to those that have extended the hand of comradeship I wish to convey my heartiest thanks, for life among the " young bloods " of Kew must have been strange to him, cut off as he was from the land of his birth. Twenty years ago, I remember, as a Student at Kew, being informed during my first week that the foremen, then Messrs. C. P. Raffill, W. Taylor, W. Dallimore, A. Osborn, and W. Irving, were individually classified as " ogres, now antique but minus their bludgeons " ; but wait until a position of responsibility is yours and you will find that while at the helm, the furling of the sails is but a secondary affair, and many a tiller is in the hands of a Kew-trained man, and his ship is watched in and out of port by the great masters of to-day.

Contrary to many of our prevalent ideas, irksome duties, lectures, classes, etc., are all helping to mould the coming man, and one's hour at Kew is all too short to take full advantage of all the opportunities that Kew offers to her sons. My advice to the young men of Kew is to " put your back into it," and if you have visions of an overseas post, discard for ever the assumption (often aggressive) of superiority, and arrive at your post with a broadened conception of life, leaving you entirely free to test the systems of men on the spot before you ; to which advice I would also add, study self-control and sociability, and carry in your mental-box Kipling's " If."

S. W. McLEOD BRAGGINS (1928).

KEWITES IN INDIA.

KEWITES have, no doubt, played a great part in the furtherance and spread of horticulture and its allied pursuits. They have left their mark wherever duty has called them, and their achievements reflect credit on their ALMA MATER. The labours of the early pioneers have mostly gone unrecognised, but the civic parks and gardens which they helped to create remain as a lasting monument to their memory.

In the early days, before the inception of the scientifically staffed Agricultural and Forest Departments, Kewites occupied a distinct position. They were undoubtedly closely associated with the early introductions and researches prosecuted in the two Botanical centres of Calcutta and Saharanpur, the former known as the Royal Botanical Gardens, Calcutta, a foundation which takes us back to the 18th century ; and the latter known as the Government Botanical Gardens, Saharanpur, of far more recent origin.

Lieut.-Col. A. T. Gage, I.M.S., late Director of the Botanical Survey of India, and Superintendent, Royal Botanical Gardens, Calcutta, in his contribution to the Royal Horticultural Society's Journal (*vide* Vol. LI., part I., of January, 1926) lucidly explained the great role played by the Royal Botanical Gardens, Calcutta.

In the following extract he pays a well-deserved tribute to those men from Kew who were from time to time associated with the institution in the introduction and dissemination of valuable economics:—"The Garden has not only prevented much unprofitable expenditure of labor, money, and time by demonstrating the unsuitability of many economic species for cultivation in Bengal, but has also aided greatly in the introduction and improvement of a host of products, such as téa, cinchona, potatoes, cotton, jute, sugar-cane, flax, hemp, rhea, sisal hemp, tobacco, coffee, cocoa, ipecacuanha, rubber, indigo, etc." These constitute assets of no mean value on which the welfare of the industries of the country so greatly depends. What Calcutta achieved for Bengal and similar territories, Saharanpur did for Upper India.

To the latter, India owes the introduction of the Arabian date, the development of the tea industry, the acclimatisation and selection of vegetables and flowers, as well as the early introduction and dissemination of the Australian Eucalyptus. No one can deny to the men who participated in those early attempts a share of recognition and gratitude.

Leaving the field of economics, their contributions include the introduction of the finest fruit trees of Europe, America, Japan, and Australia, with which the cooler climes of India are now clothed; the introduction and acclimatisation of all the gems of our gardens of which India is now the proud possessor, coupled with their achievements in the art of landscape gardening, which has become the pride of many towns throughout this vast empire; these alone are as so many tributes to the sons of Kew.

Till a decade or so ago, men sent out by Kew were, in the first instance posted to the Royal Botanical Gardens, Calcutta, where they underwent their preliminary tropical training, and thereafter were appointed to substantive positions, assuming in most cases individual charge of plantations, civic parks and gardens, according to their aptitudes and attainments. These individual units spread over the length and breadth of an empire as large as Europe (with the exception of Russia), still looked to Calcutta as their Mother institution. But, administratively, they were in independent charge under the control of the Chief Civil Officer of the district. What some of these men achieved against heavy odds is a worthy memorial to their skill and perseverance.

With the creation of the Provincial Agricultural Department, these separate units became co-attached members, and their subsequent postings were entrusted to the head of the Department. This led, in several cases, to men being recruited through the Secretary of State without reference to Calcutta, a departure which had the inconvenience of depriving our men of the privilege of an

All India Service, and considerably limiting the possibility of promotions and inter-provincial transfers.

With the advent of the Reforms, and the Indianization of the services, the demand for Kew trained men has been practically suspended. Recruitment from Kew has been further adversely affected by the employment of Anglo-Indians, who now occupy positions formerly held by practical men from Kew. This new body of officers have received a three years' course of instruction at the School of Horticulture established at Saharanpur a few years ago. They lack that practical experience which every successful Kewite possesses, (experience gained in the leading gardens, nurseries, and horticultural schools in England and on the continent). Their employment cannot be justified on the score that Kew is unable to meet the demand for European trained horticulturists, and it has given rise to a clamour on the part of young educated Indians for equal treatment in admissions to a service which demands no more than a three years' preliminary course of instruction at Saharanpur, which they are prepared to undergo.

The replacements of the professional horticulturists from Kew by a body of men who can have gained no more than a superficial knowledge of the profession might justly be described as calamitous to the future horticultural development of the country. For the true gardener is born with that craving for natural studies, which is the true incentive of the calling, and no book studies can impart in three years an experience to equal that possessed by most Kew men.

If we turn to the Guild of 1900, it will be seen that the number of Kewites in India in the service of the Government, in Native States, and private concerns did not exceed thirty, for a Continent of over 330 millions of inhabitants, or one man to 11,000,000 of the population. What this handful of men have achieved is nothing short of wonderful, and their influence is traceable from the N. W. Frontier to Cape Comorin in the South, and from Karachi and Bombay in the West to Burma in the East. There are very few towns and states of any pretensions that have not, at some time, benefited by their experience.

To the late Lord Curzon we owe a great debt of gratitude, and during his wonderful Viceroyalty he did more for the spread of education, science, and horticulture than any other Viceroy. He invariably associated horticulture with his archaeological pursuits, and wherever possible he provided the restful setting of the well-ordained garden to all the important monuments scattered over the country. It is to him that we owe the restoration of all the historical gardens of India, what he did for the world-famed gardens of Agra, Allahabad, Lucknow, Fyzabad, Delhi, Lahore, etc., has led to the transformation that gradually took place during the two decades that followed this tenure of office.

Lord Curzon, no doubt, appreciated the worth of our men, and it is to him that we owe most of the newly-created posts. The appointment of men from Kew as garden superintendents to the centres of Agra, Delhi, Lahore, Cawnpore, and Fyzabad is directly

traceable to his recommendations and suggestions. He similarly insisted on the Viceregal gardens of Calcutta and Simla being entrusted to the care of Kew men.

To turn to the Guild of 1925, we find only 25 of our men in India, 18 in actual Government service, and the rest in native States and private concerns. At present not less than nine posts formerly held by Kew men are under the superintendence of India-trained men.

In spite of this adversity, which is directly or indirectly attributable to the Indianization of the service, and possibly, also economy, the writer believes that India cannot dispense with assistance from Kew, and that Kew men will still be needed. Unfortunately the present conditions of service, may possibly not attract the best men.

In conclusion, the writer may be permitted to add what he considers absolutely necessary for a successful career in India, for the benefit of our rising generation of Kewites.

First and foremost, it must be realised that the duties often embrace important executive, administrative, and financial responsibilities, which must be correctly and courteously discharged. From a professional standpoint, it is most essential that the newcomer should have mastered his profession in all its branches, as he is ignorant of what he may be called upon to undertake. The great strides made of recent years in the scientific development of parks and gardens, plantations, etc., demand a knowledge of surveying, and of all the details and needs of projects, so as to enable their estimates to be comprehensively prepared. A knowledge of hydraulics, reclamation, protection, and afforestation of land will similarly prove beneficial.

Conditions are, no doubt, vastly different from what they are at home, but this does not imply that the rules governing them change much, and the newcomer conversant with the above will find no difficulty in adapting himself to his new surroundings.

A great deal of self-control must be exercised in the discharge of the duties, as much towards the subordinate staff as towards the authorities in power; and on no account should one indulge in measuring one's work or comparing it with what is being done in other departments. There still remains an important point, viz: cultivation of the habit of allowing superiors to share the credit of one's endeavours; the day is never far distant when the cautious worker reaps the full credit of his labour.

The writer remembers a Commissioner's farewell, when the latter thanked him for what he done during his tenure of office. "You have the great satisfaction to know that what makes the pride of this town is solely due to your untiring enthusiasm and perseverance. The Collector has, no doubt, often represented what you have achieved in his district report as having been accomplished under him. I myself, as Commissioner, in reviewing the work done in the Division, take a great share of the credit of the work done in various districts; and so on, the Governor himself, reviewing the work of the Provinces, similarly takes credit for what has been

achieved during his tenure of office, etc. At any rate, you have the personal satisfaction to know that it is you, and you alone, that accomplished what surrounds us."

In brief, an Indian career requires attainments, self-control, and sacrifices, coupled with an undoubted will-power to create that driving force which invariably leads to success and contentment.

The accompanying map of India shows the relative posting of Kew men in India as it was in 1900, and as it is at present (1925). By the aid of the scale of statute miles it will be readily seen how widely apart their postings are, with the exception of Calcutta and the Cincrome plantations in Sikkim, where several men are usually employed, and Delhi and Lahore of recent years; all the other places are separate unit charges.

(IN NUCE).

THE ASSOCIATION OF KEW GARDENERS IN AMERICA.

THE Association of Kew Gardeners in America held their annual meeting, at the Hotel Brunswick, Boston, Mass, on Saturday, April 2nd, 1927. Dinner was served at 6-30 p.m., at which those present were, Mr. and Mrs. Wilson, Miss Muriel Wilson, Miss B. Mumford, Mr. and Mrs. Lazenby, Mr. and Mrs. W. H. Judd, Mr. T. D. Hatfield, Miss J. Hatfield, Mr. J. MacGregor, Mr. R. Barton, Mr. J. Ellis, Mr. J. Brown, Mr. J. A. Semple, Mr. A. J. Thornton, and Mrs. Smith.

After dinner the Secretary read the report of the previous meeting and presented a financial report showing a balance in hand of \$21.30 (twenty-one dollars, thirty cents.) Letters were read from some of the members unable to be present, but the Secretary hopes that some effort will be made by more of the members to be at these convivial gatherings.

There was no special talk on this occasion, but recollections of Kew and Kew days, on the part of both the older and younger members, did not fail to keep the evening well-occupied, and Miss Wilson, who rendered some popular selections on the piano was well supported by some of the younger men, whose vocal powers were warmly applauded, and the evening was very enjoyably spent. The loss of a fellow-Kewite, Mr. Samuel Neil, who passed away the day before, was mourned. He was a retiring kind of man, and few of those present knew him personally. It was interesting to note the most recent graduate at the gathering was Mr. A. J. Thornton, who left Kew in 1922, and the oldest Mr. J. MacGregor, who had been away from Kew since 1869 and is now one of the oldest living Kewites, still spry and active at the age of 82.

W. H. JUDD, *Secretary-Treasurer.*

IN MEMORIAM.

ALBERT JAMES HAYTER.

THE death occurred, at St. Luke's Hospital, Chelsea, on the 7th December, 1927, of Mr. Albert James Hayter, after a short illness. The funeral service was held on the 13th December, at the Brompton Cemetery and conducted by the Rev. R. Lock, of St. John's Church, Chelsea. Mr. William Hales, Chairman of Committee, represented the Guild at the interment.

Mr. Hayter was one of our oldest Kewites, being almost in his 80th year at the time of his death. Yet, strange to relate, it was not until last April that his existence became known to the Guild Committee. Neither had he, until that time, any knowledge that a Guild of past and present Kew men was in being. Coming to Kew in 1866, from Wiltshire, his native county, where he had received his early training in some of the famous gardens in the Salisbury district, Mr. Hayter remained here until 1869. From that time until a few years ago, when age and infirmity incapacitated him from further work, he had followed the occupation of gardener in various parts of London, at different times being in public, municipal and private service. During the last few years, Mr. Hayter had borne not a few trials—the loss of his wife and other family bereavements—the break-up of his home and, latterly, hardship and want. His residence for some considerable time until last summer was one of those London hostels where a night's lodging may be obtained at a low charge. Great was his delight when once again he was able to have a little place of his own. This had been made possible by the Guild's assistance.

Mr. Hayter was of a bright and kindly disposition and nothing pleased him more than to be able to talk about the Kew of his early days, his reminiscences being both pleasant and instructive. It is to be regretted that he was out of touch with Kew for so many years; but there is satisfaction in the thought that when he renewed his acquaintanceship he found an association which links the past with the present.

R. F. W.

JAMES UDALE.

DEATH is taking heavy toll of veteran horticulturists, and it is our painful duty to record the death of Mr. James Udale, who passed away at Droitwich, on January 28th. Born at Uttoxeter, he was employed at numerous important places, such as Oldfield Hall Gardens, Uttoxeter; the Barrowash Nurseries, Derby; the Garston Vineyards, Liverpool; Worksop Manor; and Lilleshall House Gardens, Shropshire. His first position as gardener was with Sigismund Cohen, Esq., at Manchester, a shipping merchant, who made a hobby of Orchids, and imported specimens direct from South America. It was while in this position that Mr. Udale's ambition was fired and ere long he decided that a much wider knowledge of plants was necessary to fit him for more important positions. He

obtained an appointment at Kew, where he eventually became sub-foreman of the Orchid department, and acquitted himself in other directions. From Kew, he went to take charge of Sir H. Watson's gardens, at Shirecliffe Hall, Sheffield, where he remained for eleven years before becoming gardener and clerk of the works of the Elford Estate, at Tamworth. Here he had a fine opportunity and made the most of it ; but unfortunately his health gave way. In 1891, he was appointed Lecturer in Horticulture for Worcestershire, and he served this county admirably for the rest of his life, taking especial interest in the working out of trials and tests concerning fruit trees and vegetables. A man of fine presence, great natural ability to demonstrate that knowledge by means of lectures and contributions to the press. Over a very long period he was a frequent contributor to "The Gardeners' Chronicle." Mr James Udale, who was seventy-six years of age, believed himself to be a descendant of the famous Dr. Uvedale (often spelt Udale), of Enfield, the first known cultivator of the Sweet Pea in England, and after whom Uvedale's St. Germain Pear is named.

(GARD. CHRON., 1927).

JOHN C. NEWSHAM, F.L.S.

WE deeply regret having to record the death of Mr. J. C. Newsham, F.L.S., who was Principal of the Monmouthshire Agricultural Institution, at Usk. Mr. Newsham passed away on October 30th, 1927, at his home at Rhadyr, near Usk, South Wales. He was a very popular personality throughout agricultural circles in South Wales and his passing at the early age of fifty-five years is to be greatly deplored. Leaving Kew, after completing the usual course of training, in June 1896, he became a lecturer in agricultural, as well as horticultural subjects, and in 1900 he was appointed Principal of the Hampshire Agricultural Institute, at Old Basing, and later, in 1914, he was selected as Principal of the New Farm Institute, at Usk, Monmouthshire. Mr. Newsham transformed this establishment and made it specially suitable for demonstrations of market gardening, dairying, poultry keeping, etc., and later, in 1923, he was appointed County Agricultural Organiser. His enthusiasm and energy were unbounded, and in addition to his duties at Usk he was the well-known author of many useful handbooks, including *The Horticultural Notebook*, *Dairy Farming*, *Agriculture—Theoretical and Practical*, *Propagation and Pruning*, *Agricultural Arithmetic*, etc.

W. H. ETTERLEY.

As noted in the 1927 issue of the *Journal*, we record with much regret the passing of Mr. W. H. Etterley, Assistant Superintendent of the Public Parks, Shanghai. Mr. Etterley died suddenly on December 28th, 1926. He was on duty at 9 a.m. on the day of his death, and returned home about 11 a.m. in a dazed condition ; later, he became unconscious and passed away at 6 p.m. He had been sub-

ject to periodical attacks of malaria, but death was due to meningitis and acute blood pressure.

Mr. Etterley was born January 22nd, 1886, and commenced his gardening career at Belvoir Castle Gardens, under the tuition of Mr. W. H. Divers, proceeding later to Trinity College Gardens, Dublin, and to Glenart Castle Gardens. He entered Kew on March 18th, 1907, and left on January 8th, 1909, proceeding to Swanley College Gardens. In the autumn of the following year Mr. Etterley was appointed to the position he held up to the time of his demise. He left a widow and three children to mourn their loss, and the heartfelt sympathy of the Guild is extended to them.

F. J. S. BLANCANEAUX.

WE learn, through the good offices of Mr. J. G. Murray, that Mr. F. J. S. Blancaneaux, of Belize, British Honduras, died on July 9th, 1923, at the age of 72 years. The following details, which have been contributed by the Deputy Conservator of Forests in the New Forest Service, in British Honduras, will doubtless be read with much interest:—"F. J. S. Blancaneaux appears to have been born in 1851 and served as a lieutenant in the French Army during the Franco-Prussian War. On the cessation of hostilities he crossed into Belgium, and later married in England. Of his works in England, I can find no record, but he arrived in British Honduras on the 16th July, 1878. After presenting his credentials to the Lieutenant-Governor, Sir Frederick Bartee, he commenced excursions in the Colony of Yucatan as a collector of natural history specimens. Some of his discoveries were embodied, I believe, in the "Flora and Fauna Centro-Americano." In 1882 he was appointed a Special Commissioner by the Colonial Government, in order to pacify the Maya Indians of Icaiche, who were threatening to make another raid on the N.W. part of the Colony. On the 20th of May, 1882, he was successful in inducing the rebel chiefs to swear allegiance to the British Flag, at Cayo. It is understood that he did a certain amount of Coffee planting, near El Cayo, in which village he had his home, and in 1899 he commenced to exploit and export the latex derived from *Achras Sapota*, and known as "chicle," the base used in the manufacture of chewing gum. In 1893, he promoted navigation (steam) of the Belsize River, which came into operation in 1904. During his later years, he was a planter, cattle raiser, and chicle contractor."

JOHN WEATHERS.

KEWITES throughout the world will have heard with deep regret of the sudden death of Mr. John Weathers, which took place on March 10th, 1928, at his home at Park View, Isleworth, Middlesex.

Mr. Weathers, who was in his sixty-first year, was born at Newmarket, Co. Cork, Ireland, and when he was eight years of age came to England with his family to settle in the district of Isleworth. From a very early age he showed a decided inclination

for the vocation of gardening, and he himself declared that he "commenced hard work at the age of twelve-and-a-half years." He was trained at Kew, and continued to gain wide experience in the most noteworthy gardens on the continent. He later became Secretary to the Royal Horticultural Society, retiring from this position to take up literary work, being the author of many standard works on gardening subjects. He travelled very extensively throughout France, Belgium, Holland, and Germany, and to a less extent through Switzerland and Italy. He was a linguist of no mean attainments. In spite of his many duties he identified himself very closely with the affairs of his adopted town, and represented the South Ward as Councillor. He was the founder of the local monthly periodical, "The Isleworth Citizen."

Kewites will remember John Weathers as a true and loyal friend, devoted to their common interests. He has rightly been described as "a man true and just in all his dealings," and as "one fixed and loyal to those principles upon which he acted, and which he believed to be founded upon right and justice."

The public funeral was in itself a very striking tribute of the very high affection and esteem in which our deceased friend was held by those who were associated with him, not only in the sphere of his public activities, but by his large number of friends and colleagues in private life.

EDWARD CRUMP AND THOMAS ENTWISTLE.

News has reached us that Mr. Edward Crump and Mr. Thomas Entwistle have joined "the great majority" during the past year, but full details are lacking. It is hoped to publish fuller details in our next issue.

ARTHUR GARNETT.

It is with the deepest regret that we record the tragic death of Mr. Arthur Garnett, who must have been known to very many Kew men prior to his leaving Kew, in July, 1915, to settle in Tasmania as a fruit farmer. He remained in that country for eight years, and latterly had been a regular contributor to the horticultural press. Mr. Garnett was drowned whilst bathing off the Dorset coast, near Bridgeport, on August 12th, 1927, at the early age of 46 years.

The following appreciative "In Memoriam" notice appeared in "The Times" of August 22nd, 1927, and is reproduced in these pages by request of many fellow Kewites :—

"Entering as a student at Kew Gardens under the late Curator, Mr. William Watson, he was content to give his services, chiefly in the secretarial department, unrecognized, except by his friends. He neither aimed at, nor desired, professional distinction; but he wrote hundreds of columns, usually unsigned, for the *Field* and the horticultural press. On leaving Kew, he spent some years in Tasmania, whence he returned in 1923, but continued to live the free,

unconventional life of a Colonial settler in England. At his picturesque little cottage in Sussex, he entertained every week parties of visitors, and "devoted himself to helping his friends," as one of his many mourners says of him, "as other people devote themselves to their professions." A serious impediment in his speech, which made it difficult and sometimes painful to express himself, caused him to prefer seclusion, yet he never allowed this handicap to stand in the way of friendly human intercourse, and would enter into conversation on any casual rencontre with perfect readiness. Of the most cheerful, friendly and sociable disposition, he was most original and independent. He had great abilities, fine literary taste and knowledge, and a deep love of nature. Perhaps his most striking characteristic was his dry humour and sparkling wit, but what its friends prized most dearly were the warmth and constancy of his affections, his absolute sincerity and simplicity of soul, and the unflinching kindness, help, and support he gave in every form of trouble, to every variety of human being. Young and old, rich and poor, cultured or simple—all were alike to him. No one ever had deeper or wider sympathies. It was a peculiarity of his friendship, due to his union of fine and rare understanding and perfect sincerity, that so very many of those who grieve for its loss will feel their sorrow something unique and singular to themselves."

SAMUEL NEIL.

WE regret to record the death of Samuel Neil, who passed away on April 1st, 1927, at his home, 501, Park Street, Dorchester, Mass., in his 77th year. Mr. Neil left Kew in March, 1872, and for the last forty years he had conducted a business as a florist at 751, Washington Street, Dorchester. An attack of rheumatism, which touched his heart, was the cause of his death. Mrs. Neil died a few years ago, and he is survived by four sons and two daughters, the children being Thomas, Charles, Marshall, Frederick, and Mrs. William T. Decker, of Orange, N.J., and Mrs. Ernest B. Watson, of Hanover, N.H., Mr. Watson being a Dartmouth College Professor.

W. H. J.

KEW STAFF (January 31, 1928).

(The Names of Life Members are preceded by an asterisk).

	<i>Entered Kew.</i>
Director.....	*Arthur W. Hill, C.M.G., M.A., Sc.D., F.R.S., F.L.S. 1907
Assistant Director.....	Major T. F. Chipp, M.C., B.Sc., Ph.D., F.L.S..... 1906†
Economic Botanist.....	H. C. Sampson, C.I.E., B.Sc..... 1927
Assistant.....	John Aikman..... 1888†
Clerical Officer.....	S. F. Ormsby..... 1923
Keeper of Herbarium and Library.....	A. D. Cotton, F.L.S..... 1904
Assistant.....	Charles Henry Wright, A.L.S..... 1884
.....	*Sidney Alfred Skan..... 1892†
.....	Thomas A. Sprague, B.Sc., F.L.S..... 1900
.....	*Miss Elsie M. Wakefield, M.A., F.L.S. 1910
.....	William B. Turrill, M.Sc. F.L.S..... 1909
.....	John Hutchinson, F.L.S. 1904†
.....	Cecil V. B. Marquand, M.A., F.L.S... 1923
.....	V. S. Summerhayes, B.Sc..... 1924
..... for India.....	C. E. C. Fischer..... 1925
..... for South Africa.....	Miss I. C. Verdoorn..... 1925
..... for West Africa.....	J. M. Dalziel, M.D., B.Sc., F.L.S... 1924
Botanical Artist.....	Gerald Atkinson..... 1922
Sub-Assistant (Index Kewensis).....	Miss M. L. Green, B.A., F.L.S..... 1912
..... (Library).....	Ernest Nelmes..... 1920†
Assistant (Temporary Technical).....	Miss Ada A. Fitch..... 1892
.....	Miss Mabel I. Skan..... 1919
.....	Miss Connie Hillier..... 1922
.....	Frederick C. Woodgate..... 1922
.....	Charles E. Hubbard..... 1920†
.....	H. K. A. Shaw..... 1925
.....	Miss Maud Duke..... 1925
Temporary Botanist.....	*Stephen T. Dunn, B.A..... 1898
.....	A. R. Horwood..... 1924
.....	N. Y. Sandwith 1924
.....	Miss M. B. Moss, B.Sc..... 1927
Assistant Keeper, Jodrell Laboratory.	Leonard A. Boodle, A.R.C.S., F.L.S.. 1904
Keeper of Museums.....	*William Dallimore..... 1891†
Assistant.....	*John Henry Holland, F.L.S..... 1895†
.....	F. N. Howes, M.Sc., F.L.S..... 1926
Preparer.....	Laurence J. Harding..... 1913
Curator of the Gardens.....	*William J. Bean, I.S.O., V.M.H..... 1883†
Assistant.....	*William Nicholls Winn..... 1890†
Assistant Curators:—	
Herbaceous Department.....	*Walter Irving..... 1890†
Arboretum.....	*Arthur Osborn..... 1899†
Decorative Department.....	*John Coutts..... 1896†
Tropical Department.....	*Thomas W. Taylor..... 1902†
Temperate Department.....	*Charles P. Raffill..... 1898†
Clerical Officer.....	Reginald F. Williams..... 1923
.....	Ernest G. Dunk..... 1914†
.....	E. T. Burdett..... 1928
Shorthand Typist.....	Miss I. Watters..... 1925
.....	Miss M. Ovington-Jones..... 1925
.....	Miss K. Froome..... 1925
Sergeant-Constable.....	Walter Linney..... 1892
Packer.....	Harry W. Ruck..... 1907†
Superintendent of Works.....	J. E. Holman..... 1912

† Formerly a Student Gardener at Kew.

SUB-FOREMEN AND ARBORETUM PROPAGATOR.

<i>Department.</i>	<i>Name.</i>	<i>Entered Kew.</i>	<i>Previous Situation.</i>
Arboretum.....	Francis P. Knight..	19 Feb., 1923..	Royal Botanic Garden, Edinburgh.
Temperate House..	Thomas C. Forsyth.	16 May, 1927...	Sunderland Corporation Parks.
Temp. House Pits..	Hedley H. Jarman.	25 May, 1926..	Hyde Park, London, W. 2.
Palm House.....	George C. Stedman.	14 Feb., 1927...	Botanic Gardens, Glasgow.
Orchids & T. Range	George Catt.....	28 Mar., 1927..	Edgwarebury House, Elstree.
Ferrieries.....	Lewis Stenning.....	16 Feb., 1927..	Botanic Gardens, Oxford.
Rock Garden.....	Thomas D. Boyd..	24 Sept., 1923.	The Gardens, Knowsley, Lancs.
Herbaceous.....	John G. Grant.....	31 Dec., 1923..	Barley Wood, Wroughton, Somerset.
Decorative.....	Arthur G. Hopkins.	7 Nov., 1922.	Botanic Gardens, Cam- bridge.
Flower Garden.....	Charles McGregor..	22 June, 1925.	Royal Gardens, Sand- ringham.
Propagating Pits...	Walter Everitt.....	12 July, 1926...	Mulgrave Castle Gardens, Whitby.

STUDENT GARDENERS.

<i>Name.</i>	<i>Entered Kew.</i>	<i>Previous Situation.</i>
Richard M. Alcock.....	16 May, 1926	Syon Gardens, Brentford.
Bertram W. Allison.....	26 April, 1926	Lees Court, Sheldwick, Faversham.
Francis A. Barham.....	30 Mar., 1925	Bootle Parks and Gardens Department.
Victor G. Barham.....	12 Oct., 1925.	Polapit Tamar, Launceston.
John Birkentall.....	4 April, 1927	Messrs. Barr and Sons, Taplow, Bucks.
Henrie Bruins-Lich.....	4 May, 1925.	Messrs. C. M. Knopper, Utrecht.
Leonard O. Buckingham...	23 Jan., 1928.	Messrs. W. H. Gaze, Kingston.
Aubrey J. W. Cheek.....	8 Feb., 1925.	L.C.C. Parks Dept., London, S.E.1.
Leslie Cook.....	29 May, 1926.	Royal Gardens, Windsor.
Leslie B. Creasey	23 May, 1927.	Brockhurst, East Grinstead.
George A. Davis.....	19 Sept., 1927	Sutton Place, Guildford.
George Farley.....	12 Dec., 1927.	Viceregal Gardens, Phoenix Park, Dublin.
James E. Farmer.....	18 Oct., 1926.	Burford Gardens, Dorking.
Robert Findlay.....	4 April, 1927	Exbury House Gardens, Southampton.
Eric V. Floto.....	11 July, 1927	Copenhagen Botanic Gardens.
Eric G. Godseff.....	4 Jan., 1926	Lowther Castle Gardens, Penrith.
Leonard C. Hendon.....	13 Sept., 1926	John Innes Hort. Institute, Merton.
Harry C. Hildyard.....	24 Oct., 1927.	Botanic Gardens, Liverpool.
Donovan E. Horton.....	10 Jan., 1927.	Anth. Kluis' Nurseries, Boskoop, Holland.
Eric G. Johansson.....	13 Sept., 1927	Elmernan, Port Chester, New York, U.S.A.
Leslie Alex. Lee.....	12 Sept., 1927	John Innes Hort. Institute, Merton.
Leslie Philip Lee.....	19 Sept., 1927	Messrs. Bees, Ltd., Chester.
Kenneth McCready.....	6 Dec., 1926.	Aldenham House Gardens, Elstree.
John C. Nauen.....	25 Jan., 1926.	The Greenway Nurseries, Taunton.
William Nelves.....	10 May, 1926.	Messrs. L. R. Russell, Ltd., Richmond.
Stanley F. Ovenden.....	28 April, 1924	Barton Court Gardens, Canterbury.
George W. Page.....	19 Sept., 1927	Roundhay Park, Leeds.
William I. Pieris.....	3 Oct., 1927.	Trinity Hall, Cambridge.
Clement G. W. Poulter...	11 April, 1927	Royal Gardens, Windsor.
Stephen J. Roberts.....	22 June, 1925	Aldenham House Gardens, Elstree.
Charles W. Rudd.....	27 June, 1927	Pylewell Park, Lymington, Hants.
William G. Rutter.....	22 Nov., 1926	John Innes Hort. Institute, Merton.
John Secker.....	27 June, 1927	University Botanic Garden, Cambridge.
Charles E. W. Shambrook	4 April, 1927	John Innes Hort. Institute, Merton.
William E. Stewart.....	16 Aug., 1926	Messrs. Bakers, Codsall, Wolverhampton.
Ernest W. Studley.....	8 Nov., 1926	John Innes Hort. Institute, Merton.
Albert G. Teal.....	27 June, 1927	Messrs. L. R. Russell, Ltd., Richmond.
Ira V. Thornicroft.....	28 Nov. 1927.	Ravensbourne, Dunedin, New Zealand.
Frank W. Thorns.....	5 June, 1926	Burford Gardens, Dorking.

OLD KEWITES.

(The Names of Life Members are preceded by an asterisk).

<i>Name.</i>	<i>Left Kew.</i>	<i>Present Position and Address †.</i>
*Abbot, James M.....	Sept. 1898 ...	F., Park Farm, Woking Village, Surrey.
Adams, R.....	April 1903 ...	St. Joseph's Hospital, Burlington Lane, Chiswick.
Adamson, John.....	July 1909 ...	N., Moniaive, Dumfriesshire.
Agate, C. J.....	April 1926 ...	"Greystones," Yonkers, New York, U.S.A.
*Aikman, Miss M. G.....	Nov. 1924 ...	40 Mortlake Rd., Kew, Surrey.
*Alcock, Mrs. N. L., F.L.S..	Nov. 1918 ...	Dept. of Botany, Royal Botanic Garden, Edinburgh.
*Allen, C. E. F.....	Feb. 1904 ...	Supt. Agric., Port Darwin, N. Territory, Austr.
*Allt, W. S.....	Jan. 1911 ...	Poughkeepsie, New York, U.S.A.
Anderson, A. W. C.....	Feb. 1926 ...	Botanic Gardens, Dunedin, N.Z.
*Anderson, J. R.....	Oct. 1905 ...	
*Anderson, J. W.....	June 1910 ...	Minneapolis, Cynwyd, N. Wales.
Andrews, C.....	Oct. 1922 ...	F., Tresco Abbey, Scilly Islands.
Archer, Sydney	Mar. 1895 ...	
*Arden, Stanley.....	June 1900 ...	c/o National Bank of Australasia, Adelaide, S. Australia.
*Armbrecht, Otto.....	Jan. 1898 ...	Derneburg, Prov. Hanover, Germany.
Armstrong, James.....	Mar. 1893 ...	H. G. Hardcourt, North Andover, Mass., U.S.A.
*Armstrong, Robert.....	Oct. 1897 ...	170 Bartlett Av., Toronto, Ontario, Canada.
*Arnold, George.....	Oct. 1894 ...	Essex.
*Arthur, Alec.....	April 1899 ...	U.S.A.
Ashlee, T. R.....	April 1910 ...	Kerrisdale P.O., British Columbia.
Astley, James.....	Nov. 1898 ...	Vancouver, B.C., Canada.
Attenborough, F.....	Feb. 1896 ...	H.G., Annesley Ho., Villa Rd., Nottingham.
*Aubrey, A.E.....	April 1910 ...	Brookfield, Bellbroughton, Stourbridge
Augull, Karl.....	July 1902 ...	N., Latvia Dohoh, Vecvagar, Russia.
*Auton, William J.....	Feb. 1897 ...	Nitram Res. Station, Warfield, Berks.
Avins, Charles W.....	Oct. 1894 ...	
*Badgery, R.....	Aug. 1906 ...	Supt., Govt. Gardens, Shillong, Assam.
Baggesen, Niels.....	Dec. 1900 ...	Hardy Plant Nursery, Pembury, Tunbridge Wells.
Bailey, A.G., B.A.....	Dec. 1915 ...	Dept. Agric., Kenya Colony.
Bailey, Thomas.....	Sept. 1892 ...	Ravenscourt Park, W.6.
*Baker, A. F.....	April 1920 ...	Asst. Supt. of Parks and Est., Box 288, King's Pk., Bloemfontein, S.A.
Baker, E.....	Oct. 1920 ...	Garston Manor Gdns., nr. Watford, Herts.
Baker, G. A.....	Jan. 1911 ...	N., Buller Rd., Landon, Essex.
Baker, William G.....	Dec. 1887 ...	C., Bot. Gardens, Oxford.
Bale, J. H.....	Mar. 1909 ...	Folly Farm, Sulhampstead, nr. Reading.
*Balen, J. C. van.....	Mar. 1919 ...	H.G., P. W. Dept., Union Buildings, Pretoria, Union of S. Africa.
Bally, P.....	Aug. 1916 ...	425, Salisbury St., Worcester, Mass., U.S.A.
*Band, R.....	Oct. 1908 ...	P.O. Box, 206, Accra, Gold Coast.
Banfield, F. S.....	May 1927 ...	Dept. of Agric., Serdang, Malay States.
Banks, G. H.....	Mar. 1906 ...	C., Botanic Gardens, Glasgow.
*Barker, Michael.....	Mar. 1884 ...	228 Pleasant St., Oak Park, Ill., U.S.A.
*Barker, W. H., N.D.H.....	Mar. 1923 ...	361 Durnsford Rd., Wimbledon, S.W.19.
Barnett, M. J.....	April 1914 ...	C., Public Gardens, Oamaru, N. Zealand.
*Bartlett, A. C.....	May 1898 ...	Land. Gard., 318 Kew Rd., Kew, Surrey.
Barton, Robert.....	June 1890 ...	P.O. Box 57, Hamden, Conn., U.S.A.
Bass, A. P.....	Nov. 1922 ...	Botanic Gardens, Oxford.
Bass, Edward.....	Mar. 1899.	
Bass, Thomas.....	Mar. 1899 ...	13 Friar's Stile Rd., Richmond, Surrey.

† *Abbreviations*:—H.G., Head Gardener; F., Foreman; N., Nurseryman; M.G. Market Gardener; C., Curator; D., Director; M., Manager; B.G., Botanic Garden.

<i>Name.</i>	<i>Left Kew.</i>	<i>Present Position and Address.</i>
Bassett, W. E.....	June 1927 ...	Victoria, B.G., Brit. Cameroons.
Bates, A. J.....	June 1922.	
*Bates, G.....	Feb. 1904 ...	1 Clifden Place, New St., Westerham, Kent.
Batters, Frederick H.....	Feb. 1891 ...	c/o Messrs. Cutbush, Nurs., Highgate, N.6.
Baum, Jacob.....	July 1900 ...	N., Pallud sur Vevey, Switzerland.
*Baumann, Ludwig.....	Mar. 1902 ...	3233 Portis Ave., St. Louis, Mo., U.S.A.
Baumgardt, Hilding.....	Mar. 1902.	
Beale, J. H.	Apr. 1911 ...	Boyce-Thompson, Inst., Yonkers, N.Y., U.S.A.
*Beatty, E. J.....	Nov. 1905 ...	Parks Dept., Swansea.
Beer, A.....	Mar. 1919 ...	University Bot. Gdns., Innsbruck, Tyrol.
*Behnick, A.....	Dec. 1906 ...	H.G., Gruson, Magdeburg, Germany.
*Bell, Miss V.S. (<i>See Mrs. Warner</i>)		
*Benbow, Joseph.....	Sept. 1884 ...	c/o C. Hanbury, Esq., F.L.S., Kingston Maurward, Dorchester, Dorset.
Bennett, F. R.....	Sept. 1915 ...	F., Wall Hall Gardens, Watford.
Bentall, A. S.....	Oct. 1921.	
Benton, A. W.....	May 1909 ...	86 York Road, Teddington, Middlesex.
Berg, F.....	Feb. 1911 ...	Dien III., Aposthigasse 29-31, Vienna.
Berridge, T. G.....	Aug. 1912 ...	5 Lansdowne Terrace, Day's Lane, Sidcup, Kent.
*Besant, J. W.....	June 1905 ...	Keeper, Botanic Gardens, Glasnevin, Dublin.
Besant, W. D.....	June 1910 ...	Asst. Dir., Parks and Gardens, City Chambers, Glasgow.
*Best, G. A.....	Mar. 1921 ...	Asst. Curator, Bot. Gardens, Singapore.
*Biggs, E. M.....	Oct. 1912 ...	Solent Court, Warsach, Hants.
*Binnington, R.	Oct. 1924 ...	c o Town Hall, Richmond, Surrey.
Bintner, Jean.....	Sept. 1917 ...	c/o Geo. Monro, Ltd., Continental Dept., 41-42, King St., W.C.2.
Bintner Mrs. Jean (<i>Harper</i>)	Jan. 1918 ...	3 Eastdown Park, Lewisham, S.E.13.
Bird, D. H.....	Jan. 1913 ...	Rosmede, Slough Road, Datchet.
Bird, F. W.....	May 1909 ...	6 King's Villas, Slough Rd., Datchet.
Birkinshaw, A.....	April 1923 ...	Manchester Parks Dept., and Boggart Hole Clough Park, Manchester.
*Birkinshaw, F.....	April 1912 ...	Assist. Insp. Agric. Dept., F.M.S.
Bishop, Miss S. W.....	April 1919 ...	10 Redcliffe Parade East, Bristol.
*Blackburn, A.....	Oct. 1908 ...	Supt., of Parks, Blackpool.
Blake, A. E.....	Sept. 1922 ...	2 Bryor Clyffe Cott., Corton Rd., Lowestoft.
*Blanche, H. M.....	Sept. 1909 ...	Chief Forester, Finger Lakes State Park Commission, Ithaca, N.Y., U.S.A.
Bliss, Daniel.....	Nov. 1895 ...	Supt., Public Parks, Swansea.
Bliss, J.....	Aug. 1891.	
*Blythman, T.....	May 1907 ...	Aldermere, B.C., Canada.
Boff, C.....	Jan. 1916 ...	Link House, 54 Fetter Lane, E.C.4.
*Bogemans, A.....	Jan. 1911 ...	145, Avenue Van Becelacre, Watermaellez Brussels.
*Bogula, Otto.....	Mar. 1899 ...	F., Missouri B.G., St. Louis, Mo., U.S.A.
Bolt, Philip.....	Oct. 1874 ...	Whitegate Cott., Sutton Lane, Middlewich, Cheshire.
*Bolt, Philip (jun.).....	June 1898 ...	H.G., Stand Hall, Whitefield, Manchester.
Bolton, W.....	Feb. 1904 ...	Blenheim, Woodstock, Oxon.
Bond, William.....	June 1876 ...	H.G., 66 Bostall Lane, Abbey Wood, Kent.
Booker, A. J.....	Nov. 1924 ...	13 Claremont Rd., Alexandra Park, Manchester.
Boorman, John	Aug. 1885 ...	10 Hathern St., Leichhardt, Sydney, N.S.W.
Boswell, Miss D. A. L.....	June 1918 ...	Brougham Terrace, Hartlepool.
Boulton, Francis.....	Jan. 1915 ...	28 Uplands Rd., Stroud Green, N.8.
*Bowell, E. C.....	Sept. 1906 ...	N., Alpine Cott., Cemetery Rd., Chert - tenham.
Bradbury, James.....	July 1880 ...	

<i>Name.</i>	<i>Left Kew.</i>	<i>Present Position and Address.</i>
*Braggins, S. W. McLeod...	Nov. 1906 ...	Supt., La Mortola, Ventimiglia, Italy.
Braid, Major K. W.....	1925 ...	Agric. College, 6 Blythswood Sq., Glasgow.
Brain, H. J.....	Mar. 1915 ...	42 Bulstrode Avenue, Hounslow, Midd'sex.
Braybon, E. A.....	Mar. 1915 ...	Selbourne Estate, Kuala Lipis, Pahang, F.M.S.
Brenchley, J. A.....	Nov. 1882 ...	
Brierley, W. B., D.Sc., F.L.S.	Nov. 1918 ...	Research Inst. of Phytopathology, Rothamsted.
*Briscoe, T. W.....	April 1905 ...	H.G., 4 Gloucester Rd., Tutshill, Chepstow.
Broadbridge, Mrs. L.....	Aug. 1918.	
Broadway, Walter E.....	June 1888 ...	31 Cornelio St., Port of Spain, Trinidad.
Bromley, W. H.....	Sept. 1927.	
*Brooks, A. J., F.L.S. F.C.S., J.P.	May 1903 ...	D., Dept. Agric., Gambia.
Broomer, Frederick.....	April 1881.	
*Brown, A. E.....	Sept. 1905 ...	Box 147, Mimico, Ontario, Canada.
Brown, A. G.....	April 1927 ...	Southfields Grange, Putney, S.W.
*Brown, E., F.L.S.....	Dec. 1903 ...	Hillside, Doddington, near Sittingbourne, Kent.
*Brown, J.....	April 1905 ...	Gray Craig, R.F.D., 1, Newport, Rhode Island, U.S.A.
Brown, Jas.....	Nov. 1926 ...	25 Tilton Street, Fulham, S.W.6.
Brown, Nicholas E., A.L.S.	July 1914 ...	6 The Avenue, Kew Gardens.
Brown, Thomas.....	Nov. 1884 ...	Parks Rd. Offices, City Hall, Winnipeg.
*Brown, T. W., F.L.S.....	Nov. 1899 ...	9 Mountfield Gardens, Tunbridge Wells.
Brown, Wm.....	Jan. 1926 ...	c/o Clarewood Turf Club, Ltd., Durban, Natal, South Africa.
Bruun, Svend.....	June 1895 ...	N., Brøndbyvester Strand, Glostrup, Den- mark.
Bryan (Brien), H.....	Mar. 1906 ...	Steward's House, Hampstead, Glasnevin, Co. Dublin.
Bryan (Brien), I. G.....	Mar. 1878 ...	Hibernia, Palmerston, Fairfield, W. Aust.
Bryan (Brien), W.....	Feb. 1878 ...	H.G., Mayfield Gardens, Portlaw, Co. Waterford.
*Bryant, Edwin.....	Dec. 1889.	
Buckholz, V.....	Mar. 1911 ...	Cottbus Camp, Germany.
Bullock, T. G.....	May 1913 ...	Hort. Lect., 6 St. Martins, Leicester.
Burbridge, K. G.....	Jan. 1906 ...	Cons. of For., Sierra Leone, W. Africa.
Burfoot, Charles.....	Mar. 1921 ...	H.G., Bulmershe Ct., Earley, nr. Reading.
Burkill, I. H., M.A., F.L.S.	Dec. 1900 ...	"Clova," Fetcham Park, Leatherhead.
Burn, Thomas	Jan. 1888 ...	Cuerdon Hall, Bamber Bridge, Preston.
*Burrell, L. C., M.B., M.A., B.C.	Mar. 1922 ...	Arlarie, Wansford, Peterborough.
*Burrell, Miss L. C. (See Mrs. S. T. Lees).		
Burton, H.....	Dec. 1903 ...	U.S.A.
*Buss, L.....	Nov. 1924 ...	48 The Avenue, Durham.
*Butcher, F. H.....	May 1907 ...	C., Govt. Gardens, Ootacamund, India.
Butcher, G. W., J.P.....	June 1912 ...	Green Cottage, Hartfield, Sussex.
Butcher, H. G.....	Sept. 1921 ...	107 Monthermer Rd., Cathays, Cardiff.
Butler, F. B.....	Nov. 1919 ...	Supt., Dep. Agric., Kenya Colony, B. E. Africa.
Butler, P. J.....	Feb. 1922 ...	Bedford College, Regent's Park, N.W.1.
*Butts, E.....	Aug. 1922 ...	Leigham Villa, Leslie Rd., Rayleigh, Essex.
*Bysouth, Mrs. R. A. (Davies)...	Jan. 1919 ...	Lashburn P.O., Saskatchewan, Canada.
Cambridge, Robert.....	Nov. 1894 ...	Turnham's Farm, Calcot, Reading.
*Cameron, John, F. L. S....	Dec. 1873 ...	7 Hamlet Rd., Upper Norwood, S.E.19.
*Cameron, Robert.....	April 1887 ...	Est. Supt., Castle Hill Estate, Ipswich, Mass., U.S.A.

<i>Name.</i>	<i>Left Kew.</i>	<i>Present Position and Address.</i>
*Campbell, J. W., J.P.....	May 1904 ...	Visiting Agent, Rub. Est., Malacca.
Campbell, W. M., N.D.H..	April 1924 ...	Supt., Heston & Isleworth Parks, Isleworth.
*Candler, S. R.....	Feb. 1913 ...	P.O. Box, 278 Southampton, Long Island, N.Y., U.S.A.
Candler, Thomas H.....	Mar. 1897 ...	H.G., 83, Elm Rd., Bournville.
Canning, J.....	April 1891 ...	H.G., Lawn Tennis Club, Rue Lacour, Cannes.
Cannon, H. A.....	Mar. 1912 ...	Uganda Coffee and Rubber Est., Ltd., Kampala P.O. 53, Uganda.
Capsticks, W. H.....	Oct. 1912 ...	Strode, Ivy Bridge, South Devon.
*Cartwright, T.....	May 1908 ...	Supt., Expermt. Pltns., Jebelin, Soudan.
Casey, Miss E. M.....	Dec. 1917 ...	Tokyo, Japan.
*Casse, A. E.....	Mar. 1900 ...	Bayeux, Hayti.
*Cavanagh, A. A.....	Dec. 1923 ...	M., Liebig's Yerba Maté Plantations, Playadito, Corrientes, Argentine Republic.
*Cavanagh, B.....	Nov. 1899 ...	Nao Salao, Gwalior, Central India.
*Cave, George H., M.B.E....	Aug. 1896 ...	Ashton-under-Hill, nr. Evesham.
*Cave, J. E.....	April 1903 ...	H.G., Crix Cottage, Binfield, Berks.
Cessford, John.....	April 1880.	
Chambers, G.....	April 1915 ...	Woodside, Llanfoist, near Abergavenny, Mon.
Chambers, Mrs. K. (Watson, K.).	Mar. 1922 ...	32, Valley Road, Welwyn Garden City.
Champion, Miss.....	Feb. 1916 ...	Ystrad, Denbigh, N. Wales.
*Chandler, P.....	Nov. 1919 ...	Assist., Agric. Dept., Kampala, Uganda.
Chapelow, A. U.....	June 1895.	
*Chapman, H. L. R.....	July 1919 ...	H.G., Botanic Garden, State College, East Lansing, Michigan, U.S.A.
Charman, George.....	Feb. 1885 ...	Florida.
Child, H. V.....	Jan. 1911 ...	Kew Convent, Kew, Victoria, Australia.
Chinery, Philip.....	Nov. 1882 ...	H.G., Bulmer Lodge, Sudbury, Suffolk.
Chollet, P.....	Oct. 1916 ...	c/o Messrs Sander and Sons, Bruges.
Christensen, P. C.....	Mar. 1901 ...	Norregade 64, Odense, Denmark.
*Christie, J. S.....	Nov. 1909 ...	Supt. Parks, Camberwell, 424 Lordship Lane, East Dulwich, S.E.22.
Cishegg, J.....	June 1908 ...	M., Stanmore Nurs., Stanmore, Middlesex.
Clacy, C. S.....	April 1908 ...	Agates Meadow, Finchampstead, Berks.
Clark, John.....	Dec. 1900 ...	Spt., Cem. Lodge, Hatfield Rd., St. Albans.
Clark, Peter D. G.....	Sept. 1880 ...	c/o Curator, Royal Bot. Gardens, Ceylon.
Clarke, G.....		Billing Hill Gardens, Northampton.
Clarke, N. K.....	Nov. 1909 ...	H.G., Orsett, Grays, Essex.
Clarke, T. E.....	Jan. 1924 ...	Glasgow Parks Dept.
*Clegg, A. S.....	Jan. 1921 ...	c/o Mr. E. Kaufman, Aspen Wall, Pitts- burg, Pa., U.S.A.
*Clements, T.....	Dec. 1906 ...	Netherton Rd., Drewsteignton, Nr. Exeter, Devon.
Close, A. W.....	May 1908 ...	c/o U.S. Dept. Agric., Glen Dale, Mary- land, U.S.A.
*Coates, Mrs. D. B. (Taylor)	Aug. 1916 ...	South Kilworth, Rugby.
Cocker, Aloysius.....	June 1872 ...	H.G., Stourton Castle, Knaresborough.
Cole, F. J.....	Mar. 1901 ...	Lands. Arch., Seattle, Brit. Columbia.
*Collin, H.....	Nov. 1923 ...	2 Miller's Lane, The Cape, Warwick.
Collins, J.....	Oct. 1910 ...	36 The Butts, Brentford.
Collins, W.....	April 1919 ...	S., Clarence Park, St. Albans.
*Conn, P. W.....	Oct. 1923 ...	S., Bedwelty Park, Tredegar, Mon.
Cook, F. J.....	May 1921 ...	Asst. Gdnr., Nat. B. G., Kirstenbosch, S. Africa.
*Coombes, G.....	July 1915 ...	Briarbank Estate, Birmingham, Mich., U.S.A.
Cooper, Edward.....	Oct. 1894 ...	Sander and Sons, Nurserymen, St. Albans.
*Cooper, E. C. W.....	May 1925 ...	Foxholes Farm, Hertford Heath, Herts.
Cooper, T.....	Sept. 1914 ...	Birmingham Parks Dept., and 92 West- minster Rd., Selly Park, Birmingham.

<i>Name.</i>	<i>Left Kew.</i>	<i>Present Position and Address.</i>
*Cope, Gertrude.....	Nov. 1898 ...	Pinewood Gardens, Chandler's Ford, Winchester.
Corbett, G.....	May 1920 ...	Agric. Supt., Rodrigues.
Corbett, W.....	Mar. 1925 ...	Lea Valley Exp. Station, Cheshunt, Herts.
Corbishley, Miss A. G.....	April 1921 ...	74 Ridge Rd., S. Durban, S. Africa.
Cork, Henry.....	Mar. 1893 ...	H.G., Hampton Lodge, Seale, Farnham.
Cotton, Mrs. A. D.....	Aug. 1915 ...	Herbarium House, Kew, Surrey.
Coudrey, Joseph.....	Mar. 1883.	
*Cousins, F. G.....	May 1911 ...	Parks Dept., Town Hall, Torquay.
Coutts, W.....	Feb. 1903 ...	H.G., Learney, Torphins, Aberdeensh, N.B.
Coventry, T.....	April 1924 ...	Manchester Parks Dept., and 138 Sandy Lane, Chorlton-cum-Hardy, Manchester.
Coward, E.....	July 1923 ...	Supt., Fulham Cemeteries Dept., East Sheen, S.W.14.
*Cowley, H.....	Dec. 1907 ...	Editor, "Gardening Illustrated,"; and 18 Sutherland Rd., Tunbridge Wells.
Cox, Alfred.....	Feb. 1885 ...	M.G., Newbury, Berkshire.
*Coxon, W. E.....	Aug. 1898 ...	Braemar Nurseries, West Worthing.
*Cradwick, William.....	July 1888 ...	Agric. Instr., Mandeville P.O., Jamaica.
Craib, Prof. William G., M.A., F.L.S.	July 1915 ...	Prof. of Botany, University of Aberdeen
*Craig, Mrs. A. P.....	July 1920 ...	"Northbank," Hort. College, Swanley, Kent.
Creek, Ernest.....	Aug. 1901 ...	Hort. Inst., Shire Hall, Bury St. Edmunds.
Cressier, G. H.....	May 1912 ...	9 Rue Vallier, Levallois Perret (Seine), France.
*Crosby, F.....	Dec. 1901 ...	24 Lancaster Rd., Edmonton, N.18.
Crot, W.....	Mar. 1904.	
*Crouch, G. S.....	Sept. 1913 ...	The Fairseat Nurseries, Wrotham, Kent.
Crowe, V. C.....	Dec. 1919 ...	23 Gloucester Road, Kew, Surrey.
*Culham, A. B.....	June 1910 ...	Supt., Agric. Dept., Gold Coast.
Culver, D. R.....	June 1922 ...	81 Lr. Mortlake Rd., Richmond, Surrey.
*Cundy, Charles.....	April 1861 ...	N., "The Elms," Gt. Cornard, Sudbury, Suffolk.
*Cunningham, W. J. M.....	Oct. 1921 ...	"Hycroft," Shaughnessy Heights, Vancouver, B.C., Canada.
Curtis, Charles, H., J.P....	May 1892 ...	M. Ed., "Gardeners' Chronicle,"; and "Brentlea," 24 Boston Rd., Brentford, Middlesex.
*Dalgarno, Fred C.....	Mar. 1902 ...	Park Supt., Bowes Mus., Barnard Castle, Co. Durham.
Daubanton, C.....	Mar. 1908.	
*Davidson, Miss H. W.....	May 1919 ...	Gerrans, Bassett, Southampton.
Davidson, William.....	April 1896 ...	Monkhams Hall, Waltham Abbey.
Davies, Cecil.....	Jan. 1899 ...	D., Hammonton Hardy Plant Nursery, Folsom, Atlantic City, N.J., U.S.A.
Davies, Miss G. A.....		
*Davies, Henry J.....	Jan. 1894 ...	Point House, Oakley Rd., Bromley Common, Kent.
Davies, Miss R. A. (See Mrs. Bysouth).		
Davies, T. P.....	Oct. 1899 ...	H.G., Pen-myarth Pk., Crickhowell, S. Wales.
Davies, W.....	June 1912 ...	117 Maryvale Road, Bournville.
Davis, H. K.....	Sept. 1909 ...	272 Sandycombe Road, Kew, Surrey.
*Davy, E. W.....	Dec. 1905 ...	Asst. Dir., Dept. of Agric., Zomba, Nyassaland.
*Davy, J. Burtt, Ph.D., F.R.G.S., F.L.S.	Sept. 1892 ...	Lecturer in Tropical Forest Botany, Imperial Forestry Institute, Oxford.
*Dawe, M. T., O.B.E., F.L.S.	Sept. 1902 ...	Director of Agriculture, Cyprus.
*Dear, G.....	Dec. 1922 ...	4 Church Walk, Upper Butts, Brentford, Middlesex.
Dearling, William.....	April 1891 ...	Sussex Farm, Oakey, Queensland.

<i>Name.</i>	<i>Left Kew.</i>	<i>Present Position and Address.</i>
Debot, M.....	May 1903 ...	372 Chausei d'Helmet, Schaerbech, Brussels.
*Derry, Robert.....	Nov. 1883 ...	14 Lion Gate Gdns., Richmond, Surrey.
Derwael, F. L. G.....	June 1910 ...	Inspector of Public Gardens, Antwerp.
De Troyer, Ch. L.....	Aug. 1904 ...	D., Grand Etablissement Horticole de Wolverthem lez Bruxelles, Belgium.
Dines, J. H.....	Sept. 1908 ...	H.G., Downside, Leatherhead.
*Dinn, Theo. J.....	Sept. 1901 ...	Laurens Reaelstraat 7, The Hague, Holland.
Dixon, James.....	April 1909 ...	c/o Messrs. Bees, Sealand Nurs., Chester.
Dixon, Matthew K.....	Oct. 1877.	
Dixon, William.....	May 1890.	
Dodd, E. S.....	Jan. 1910 ...	c/o J. N. Seligman, Willow Brook, Irvington-on-Hudson, N.Y., U.S.A.
Dodd, W. G.....	Mar. 1908 ...	Cherry Lane Cottage, Kimley, Dudley.
Dollman, Miss R.....	June 1917 ...	Hove House, Bedford Park, Chiswick, London, W.4.
Donaldson, R. H.....	Dec. 1906 ...	P.O., Cannington, Western Australia.
*Down, W. J.....	Sept. 1907 ...	H.G., 14 Hazelwood Av., Murryatville, Adelaide, S. Australia.
*Downer, H. E.....	Mar. 1912 ...	H.G., Vassar Coll., Poughkeepsie, U.S.A.
*Downes, E. J.....	Oct. 1920 ...	Horticulturist, Dept. Agric., Jamaica, B.W.I.
*Draper, Walter.....	July 1892 ...	
*Drew, Miss D. E.....	Mar. 1922 ...	51 Petty France, Buckingham Gate, S.W.
Drew, W. H.....	Oct. 1875 ...	Penwartha House, Callestick R.S.O., Cornwall.
*Drost, Klaas.....	Oct. 1880 ...	Oldebrook, Holland.
Drummond, R. A.....	May 1926 ...	North of Scotland Agric. College, Aberdeen, N.B.
Dufton, L.....	Aug. 1926 ...	c/o Kelways, Ltd., Langport, Somerset.
*Duncan, J. G.....	Mar. 1901 ...	Bot. Gdn., Port Elizabeth, S. Africa.
Dunk, W., D.C.M.....	Sept. 1909 ...	1 Gainsborough Rd., Richmond, Surrey.
Durchanek, L.....	May, 1927 ...	c/o Arnold Arb., Mass., U.S.A.
Duval, Raoul.....	Oct. 1901 ...	Buisson Hocpin, Evreux (Eure) France.
*Dyer, Sir W. T. Thiselton, K.C.M.G., C.I.E., F.L.S. etc.	Mar. 1906 ...	The Ferns, Witcombe, Gloucester.
*Dyson, William.....	Jan. 1899.	
Eady, G. H.....	June 1912 ...	Asst. Supt., Agric. Dept., Gold Coast.
Earle, Arthur J.....	July, 1891.	
*Eavis, Harry.....	Mar. 1902 ...	H.G., Fir Cottage, Hazel Grove, Hindhead, Surrey.
Elder, John.....	May 1902 ...	Chatlapore Tea Estate, Shamshernager P.O., South Sylhet, India.
Ellings, William.....	Oct. 1909 ...	c/o G. F. Baker, Esq., Tuxedo Park, N.Y., U.S.A.,
*Elliot, J. A.....	Nov. 1905 ...	Allynugger Tea Co., S. Sylhet, India.
*Ellis, Miss C. F. (See Mrs. Somers).		
*Ellis, J.....	Feb. 1915 ...	H.G., Smith College, Northampton, Mass., U.S.A.
Ellis, Robert.....	June 1885.	
Elsom, Fred.....	Aug. 1886.	
*Endres, H. W.....	May 1912 ...	c/o Westover Nursery Co., Clayton, St. Louis, Missouri, U.S.A.
England, J. W.....	Jan. 1928 ...	P.O. Box 40, Pau, Pyrenees, S. France.
Epps, H. W.....	Jan. 1911 ...	Blunt House Gardens, Oxted, Surrey.
*Epps, Miss L.....	April 1919 ...	7 Powis Gdns, Golders Green, N.W.4.
Evans, Alfred E.....	Oct. 1901 ...	"Devona," 520 Portland Rd., Hove, W., Sussex.
*Evans, W. N.....	June 1914 ...	6 Victoria Avenue, Granville St., Hull.
Everett, T. H.....	June 1927 ...	H. E. Manville Estate, Pleasantville, N.Y., U.S.A.
Eves, J. W.....	Mar. 1904 ...	14 Park Mount, Kirkstall, Leeds.

<i>Name.</i>	<i>Left Kew.</i>	<i>Present Position and Address.</i>
*Falconer, William.....	Feb. 1872 ...	S., Allegheny Cem., Pittsburg, Pa., U.S.A.
Farr, B. E.....	Oct. 1923 ...	Bagot, Jersey, C.I.
Feltham, Edward.....	Dec. 1909 ...	Kingsley, Milldown Rd., Goring-on-Thames.
Ferguson, Bruce.....	Sept. 1886 ...	Australia.
Field, F. W.....	May 1909.	
Finch, Mrs. E. G. (Wareham).	Aug. 1920 ...	c/o P.O., Fort Jameson, Rhodesia.
Finkelmann, Robert.....	Dec. 1888 ...	c/o H. Mette, Quedlinburg, Germany.
Fischer, Joseph.....	April 1902 ...	N., Monumentenstr. 29, Berlin, S.W.
*Fishlock, W. C.....	Oct. 1900 ...	Asst. Supt., Agric. Dept., Gold Coast.
*Flack, Mrs. C. L. (Miss J. Mash).	Jan. 1919 ...	8 Assiniboine Court, Winnipeg, Canada.
*Flippance, F.....	July 1915 ...	Asst. C., B.G., Penang.
*Flossfeder, F.....	May 1904 ...	School of Agric., Davis, Cal., U.S.A.
*Flowers, Alfred.....	June 1902 ...	Roseland, New Jersey, U.S.A.
Flynn, G. O.....	Mar. 1924 ...	Banstead, Surrey.
Forbes, George.....	Mar. 1873 ...	Daphne Cottage, Orchard Rd., Burpham, Guildford.
Ford, G. W. J.....	June 1927.	Longwood, Kennett Sq., Pa., U.S.A.
Ford, Thomas H.....	Nov. 1876 ...	20 Marlborough Road, Swansea.
Foster, J. T.....	Dec. 1908 ...	Australia.
*Fothergill, G. H.....	Jan. 1921 ...	Asst. M., Cinchona Plantations, Munsong, Kalimpong, India.
Fowell, Edmund.....	May 1887 ...	H.G., Chiswick, Ocean St., Woolahra, Sydney, N.S.W.
Fowler, James M.....	June 1886.	
*Fox, Walter.....	June 1879 ...	"The Little House," Buckingham Road, Shoreham-by-Sea.
Frank, Henri.....	Sept. 1893 ...	D., B.G., Jaysinia, Samoens, Switzerland.
Frankland, Arthur.....	April 1897 ...	N., 46 King Cross, Halifax.
Franklin, Walter.....	Nov. 1926 ...	F., Botanic Gdns., Cambridge.
*Fraser, John, V.M.H., F.L.S.	May 1885 ...	355 Sandycombe Rd., Kew, Surrey.
Fraser, Thomas.....	May 1880 ...	Florist, Ealing Common Station, W.5.
Freda, Miss A. B.....	May 1919 ...	Box 214, Chester, Nova Scotia, Canada.
*Free, M.....	Mar. 1912 ...	H.G., Brooklyn B.G., New York, U.S.A.; and 1000, Washington Av., Brooklyn.
Freeman, J.....	Oct. 1918 ...	18 Station Rd., Preston Park, Brighton.
French, F. W. Prosser.....	June 1891 ...	Acct. and Compt., Gen. Dept., Somerset House, Strand, W.C.2.
French, H.....	Nov. 1894 ...	H.G., Moulton Grange, Pitsford, Northampton.
Fry, W. G.....	Sept. 1926 ...	University College, Reading; and 43, Addington Rd., Reading.
*Fyffe, R.....	Mar. 1908 ...	Conservator of Forests, Forestry Dept., Entebbe, Uganda.
Gagge, A.P.	July 1903.	
Gagge, Mrs. A. P. (Smith).	July 1903.	
*Galt, Alexander S.....	Sept. 1894 ...	Rutherglen, Lidgett Pk. Rd., Roundhay, Leeds.
*Gammon, F.....	April 1907 ...	City Park, c/o Municipal Offices, Nairobi, Kenya Colony.
Gardiner, G. F.....	Oct. 1912 ...	University Gardens, Bristol.
Gardiner, H. J.....	Feb. 1922.	
Gardner, A.....	Mar. 1905.	
Gardner, H. G.....	June 1905 ...	Winona, Ontario, Canada.
Gardner, L. W.....	May 1913 ...	Chuikuli Estate, P.O. Box 8, Fort Jameson N.E. Rhodesia.
Garnett, Miss R. (See Mrs. Nickalls).		
Garnett, Miss O. R.....	Mar. 1918 ...	Orchard End, East Hendred, Steventon, Berks.
*Gaut, R. C., M.Sc., N.D.A.	May 1898 ...	Agric. Adv., County Education Office, 37 Foregate St., Worcester.

<i>Name.</i>	<i>Left Kew.</i>	<i>Present Position and Address.</i>
*Gentil, Louis.....	Sept. 1897 ...	Brussels, Belgium.
Gevellers, Joseph.....	Mar. 1901 ...	Ferrieres en Brie, Seine et Marne, France.
Gibson, George.....	Feb. 1900.	
*Gibson, J. O. E.....	June 1902 ...	N., Larkland Nurseries, Ilkeston, Derbyshire.
*Gifford, F.....	June 1874 ...	N., Montague Nursery, Hornchurch.
Gilbert, John.....	Jan. 1875 ...	14 York Terrace, Cheam, Surrey.
Gill, B.....	Oct. 1923 ...	Kernick, Penryn, Cornwall.
*Gill, Ernest.....	Feb. 1901 ...	N., 14 Market St., Falmouth, Cornwall.
Gill, Robert.....	July 1909.	
Girdham, C. G.....	Feb. 1901 ...	Avondale, Cecil Rd., Hale, Cheshire.
*Glover, F.....	June 1914 ...	County Offices, Preston.
Goad, Miss M. E.....	April 1917.	
Godard, Gaston.....	Nov. 1902 ...	France.
*Godfrey, W. F.....	April 1921 ...	N., 37 Canterbury Rd., Whitstable, Kent.
*Godseff, Leo G.....	Mar. 1901 ...	Chief Supt. of Cemeteries, Liverpool; and Woolton Rd., Garston, Liverpool.
Godson, H. K. A.....	June 1926.	
*Goëmans, H. J.....	Feb. 1890 ...	231 Chaussée d'Aurees, Ghent, Belgium.
*Goldring, Fred.....	Feb. 1879 ...	N., Slingerlands, Albany, U.S.A.
Goldsmith, M. C.....	Sept. 1927 ...	University College, Reading.
Goodrich, W. J.....	Dec. 1911 ...	5 Kew Bridge Road, Brentford.
*Gossweiler, John, F.L.S....	Sept. 1898 ...	D., B. Gdns., Angola, Port, West Africa.
*Gostling, William H.....	Mar. 1882 ...	Aldergate Wood, Lympne; nr. Hythe.
*Gould, A. R.....	Aug. 1910 ...	Lands Arch., 231 Milpas Street, Santa Barbara, California, U.S.A.
Grant, Miss N.....	Sept. 1917 ...	The W.F.G.A. Club, 29 Park Road, Upper Baker Street, London, N.W.1.
*Gray, G. W.....	April 1910 ...	
Gray, Patrick, J.....	Dec. 1897 ...	Hort. Inst., 11 Rutland Square, Dublin.
*Green, Albert.....	Nov. 1885 ...	"Wimble," Dorset Rd, Croydon, Victoria, Australia.
*Green, Harold.....	Jan. 1911 ...	Supt., Bot. Dept., Hong Kong.
*Green, Henry F.....	Mar. 1900 ...	La Falaise, St. Martin's, Guernsey.
Green, H.....	Dec. 1916.	
Green, James.....	Feb. 1895 ...	Trelissick, Truro, Cornwall.
Greening, L.....	Dec. 1908 ...	6 Park Hill, Richmond Hill, Surrey.
Greenough, J. C.....	June 1912 ...	Garden Dept., University of Alberta, Edmonton, Canada.
Gregory, C. R., N.D.H.....	Mar. 1925 ...	72 New Street, Leamington.
Greenway, P. J.....	Oct. 1925 ...	Agric Res. Inst., Amani, Tanganyika, Terr.
Gregory, John.....	Mar. 1866 ...	60 Canterbury Road, Croydon.
Gregory, W.....	Oct. 1920 ...	Plant Pests Lab., Min. of Agric., Milton Road, Harpenden.
*Gribble, John J.....	April 1895 ...	Florist, Taroveor Rd., Penzance, Cornwall.
*Griessen, Albert E. P.....	Oct. 1898 ...	11, Park Rd., Craven Park, N.W.10.
Griffin, Miss A. N.....	May 1919.	
Grindley, William.....	June 1898 ...	H.G., 6 Fulwell Park, Liverpool.
*Grinham, F. B.....	Oct. 1916 ...	Hort. Off., I.W.G.C., Rue Moulin, Masclat, Bethune, P. de C., France.
Groombridge, Amos.....	April 1889 ...	Supt., Open Spaces, Shoreditch, Borough Council.
*Grout, G.....	July 1920 ...	Chisime Estate, Fort Jameson, Rhodesia.
Grundy, R.....	Jan. 1906 ...	Propagator, Parks Dept., Swansea.
*Gullick, W. F.....	July 1898 ...	N., Waterloo Nursery, Salisbury.
Gulvin, Miss Annie M. (See Mrs. Turner).		
*Gunnell, Miss Edna M.....	Sept. 1901 ...	Hort. Inst., 1 Richmond Road, Exeter.
Gunthorpe, Walter C.....	Feb. 1888 ...	H.G., Gt. Meadow, Castletown, Isle of Man.
Guttridge, James J.....	April 1891 ...	Chief S. and C. of Pks. and Gdns., Liverpool.
*Hackett, W.....	May 1906 ...	Asst. C., Bot. Gdns., Liverpool.
*Haga, K.....	Mar. 1906 ...	877 Kitazawa, Matsuzawa, Tokyo, Japan.
*Hales, William, A.L.S.....	Aug. 1899 ...	C., Physic Garden, Chelsea, S.W.3.

<i>Name.</i>	<i>Left Kew.</i>	<i>Present Position and Address.</i>
*Halkerston, D.....	Feb. 1918 ...	} Cradge Bank Road, Spalding, Lincs.
*Halkerston, Mrs. D. (Ker-mode).	Oct. 1918 ...	
Hall, F. W.....	April 1920 ...	Asst. Dept. of Agric., Kampala, Uganda.
*Hall, John A.....	Sept. 1883.	
*Halliburton, J. D.....	Nov. 1905 ...	Supt., Victoria Park, Bath.
Halvey, Joseph.....	April 1886 ...	
Hammarberg, Lars M.....	May 1896 ...	Götgatan 111, Stockholm, Sweden.
Hampton, Miss C. H., F.I.P.S.	Mar. 1926 ...	Min. Agric. and Fisheries, 10, Whitehall Place, S.W.1.
Hands, R. B.....	Jan. 1926 ...	Birmingham University, Edgbaston.
*Hanley, Thomas.....	Nov. 1885 ...	Washington, D.C., U.S.A.
*Hansen C. Bekker.....	Aug. 1916 ...	c/o Société du Nadal, Quelimone, Portuguese East Africa.
*Hansen, Julius.....	Sept. 1887 ...	N., Pinneberg, near Hamburg.
Hansen, M.....	April 1911.	
*Harcourt, F. G.....	July 1920 ...	Supt., Dept. of Agric., Grenada.
Hardie, A.....	Feb. 1909 ...	Supt., Lawrence Gdns., Lahore, India.
Harding, C.....	Mar. 1907.	
*Hardy, William B.....	April 1894 ...	Blackbridge, Lower Hutt, Wellington, N.Z.
Harper, Miss E. M.....	April 1920.	
Harper, Miss K. M. (<i>See Mrs. Bintner</i>).		
Harris, Arthur.....	July 1884.	
Harris, C. H.....	May 1912 ...	H.G., Wigmore Park, Capel, Surrey.
*Harris, George.....	May 1874 ...	Pilton Gdns., Westerhope, Newcastle-on-Tyne.
*Harris, Jas. E.....	Dec. 1899 ...	N., Blackpill Nurseries, Swansea.
Harris, Thomas, J.....	Sept. 1896 ...	c/o Taylor-Alexander Co., Winter Haven, Florida, U.S.A.
*Harrow, Robert L., V.M.H.	Jan. 1893 ...	Royal Bot. Gdns., Edinburgh.
Harrow, William.....	June 1885.	
Hart, Miss R.....	Dec. 1917 ...	Woodside, Howth, Ireland.
Hartland, James.....	Dec. 1880 ...	The Brinton Park, Kidderminster
*Hartless, Amos C.....	Mar. 1889 ...	42 Gap Rd., Wimbledon, S.W.19.
*Hartless, A. J.....	June 1905 ...	H.G., King's Walden Bury, Hitchin, Herts.
Hartman, Carl W.....	April 1887.	
*Harvey, Miss V. M. H.....	Dec. 1917 ...	5 Victoria Parade, Kew Gardens.
*Harwood, A.....	Jan. 1903 ...	
Haskings, John.....	Mar. 1901 ...	India.
*Haspels, D.....	Oct. 1916 ...	Villa de Wychert, Nymegen, Holland.
*Hatfield, Theoph. D.....	April 1878 ...	H.G., Wellesley, Mass, U.S.A.
*Hauser, E.....	Oct. 1913 ...	c/o Messrs. Sander and Sons, Bruges.
Hawkins, F.....	July 1923 ...	The Sungei Buaya Rubber Co., Ltd., Bandar Kwala Estate, Galang, Sumatra (E.C.) Dutch E. Indies.
Hawley, Miss D. M.....	Aug. 1916 ...	Leicester Grange, Hinckley, Leicester.
*Hayes, R. R., M.C.....	Aug. 1916 ...	Heathfield, Ambleside, Cumberland.
Hayes, T. R., B.Sc.....	Nov. 1925 ...	Dept. of Agriculture, Gambia.
*Hazel, C.....	Nov. 1919 ...	Govt. Plantations, Bukulasa, P.O. Bombo, Uganda.
*Head, W.....	Aug. 1906 ...	Supt., Kumaun Govt. Gardens, Chubbattia, U.P., India.
Heald, Ernest.....	April 1900 ...	Box 806, Medicine Hat, Alberta, Canada.
Heath, F. A.....	Mar. 1901 ...	Ross Rd. Lodge, Grangewood, S. Norwood.
*Hecke, George Heinrich.....	Aug. 1890 ...	Director of State Dept. Agric., California.
*Hemming, Ernest.....	May 1891 ...	Editor, "The National Nurseryman," Easton, Maryland, U.S.A.
*Henderson, Henry.....	May 1904 ...	Highgrove, Doughton, Tetbury, Wilts.
*Henry, John M.....	April 1867 ...	N., Hartley Row, Winchfield, Hants.
*Hibbins, W. R.....	Oct. 1916 ...	The Cottage, Southorpe, Stamford, Lincs.
*Hiatt, E. P.....	Mar. 1913 ...	Yew Tree Cottage, Pensford, Bristol.
*Higgie, William.....	Nov. 1865 ...	Gilling, Yorkshire.
*Higgott, O. F. A.....	Mar. 1919 ...	6 Antrim Av., Suffern, New York, U.S.A.

<i>Name.</i>	<i>Left Kew.</i>	<i>Present Position and Address.</i>
Hill, G. W.....	June 1925 ...	The Gardens, Sherfield Manor, Basingstoke.
Hillier, G.....	Nov. 1915.	} "Dunvegan," Jersey Road, Osterley, Middlesex.
Hillier, J. M.....	April 1926 ...	
Hislop, Alexander.....	June 1902 ...	Memorial Hospital, Buluwayo, Rhodesia.
Hoad, W. G.....	Oct. 1905.	
Hobbs, Cecil.....	Jan. 1909.	
Hockley, W. A.....	Feb. 1925 ...	The Gardens, Luton Hoo, Luton.
Holden A.....	May 1914 ...	Bedwell Plash Farm, Stevenage, Herts.
Holley, Henry.....	May 1898 ...	C., Queenstown Gdns., Cape Colony.
Holtom, F.....	Mar. 1907 ...	Canada.
Hopkins, A. J.....	Nov. 1926 ...	Villa Yolanda, Ospedalletti, Ligure, Italy.
Hopkins, James.....	Nov. 1870 ...	H.G., High Cross, Framfield, Sussex.
Hopper, E.....	July 1925 ...	Weston House School, Leamington Spa.
Horsfall, James H.....	Sept. 1883 ...	c/o J. Mortiss, Esq., Gt. Thorn Street, Paddington, N.S.W.
Horton, Ernest.....	May 1901 ...	M., Bees, Ltd., Mill Street, Liverpool.
Horton, O.....	Feb. 1903 ...	H.G., Calderstone Estate, Liverpool.
Hosking, Albert.....	June 1894 ...	Supt., J. Innes Hort. Inst., Merton Park, S.W.19.
Housego, Maurice.....	May, 1902 ...	68 Abingdon Villas, Kensington, W.8.
Houten, A. W. van der....	Aug. 1919 ...	c/o Municipal Gdns., Cape Town, S.A.
Howell, W.....	Feb. 1925 ...	Parks Dept., Cambridge.
Howlett, Charles.....	Nov. 1894 ...	M., Schaapkraal Nurs., Tarkastad, C.P., S.A.
Hubbard, George.....	April 1892.	
Hughes, A.....	Oct. 1904 ...	F., c/o Messrs. Wallace, The Old Gdns., Tunbridge Wells.
Hughes, E. A.....	Jan. 1921 ...	Supt., Govt. Gdns., Lahore, India.
Hume-Spry, Miss P. C. (<i>See Mrs. Trench</i>)		
Humphreys, Thomas.....	Dec. 1892 ...	Curator, Bot. Gardens, Birmingham.
Hunt, Robert.....	Nov. 1897 ...	Bot. Scheme Offices, Avery Hill, S.E.9.
Hunter, T.....	Oct. 1911 ...	Supt., Agric. Dept., Gold Coast.
Hunter, W. G.....	May 1920.	
Hutchings, Miss A.....	Jan. 1917 ...	"Irene," Grove, near Canterbury, Kent.
Hutchings, Miss Alice (<i>See Mrs. Patterson</i>)		
Hutchings, William H.....	June 1916.	
Hutchinson, H.....	Mar. 1913 ...	River Oaks Corporation, Houston, U.S.A.
Ibbett, W. C.....	Sept. 1927 ...	c/o Parks Dept., Bermondsey, S.E.16.
Illman, G. F.....	Sept. 1912 ...	Uganda Representative to Lord Dewar, Imperial Hotel, Kampala, Uganda.
Ing, W. J.....	July 1905 ...	F., Home Park, Hampton Court, Middx.
Ingleby, Fred J.....	Feb. 1891 ...	St. George's Group, Neboda, Ceylon.
Iwamoto, K.....	Jan. 1914 ...	Shodoshima, Kagawaken, Japan.
Jackson, P. C. E.....	April 1915.	
Jackson, Robert M.....	Oct. 1893 ...	F., Glynllivon Park, Carnarvon.
Jackson, T.....	July 1905 ...	Agric. Supt., Bot. Sta., St. Vincent, B.W.1.
Jacobs, Miss A.....	Feb. 1918 ...	81 Waller Rd., New Cross Gate, S.E.14.
James, J.....	May 1913 ...	2 Bangor Road, Brentford.
Jarrett, J. C.....	April 1913 ...	Bradford, Victoria Avenue, Wellington, Salop.
Jeffery, John.....	Mar. 1902 ...	H.G., Idlerocks, near Stone, Staffs.
Jeffrey, J. F.....	Jan. 1894 ...	Laneside, Shipham, Winscombe, Som.
Jelinek, B.....	June 1912 ...	Institution, "Svetla," Gross Meriritsh, Moravia (Austria).
Jennings, A. J.....	Mar. 1912 ...	c/o F. and F. Nurseries, Springfield, New Jersey, U.S.A.
Jennings, W. J.....	Sept. 1898 ...	H.G., Napsbury Asylum, St. Albans.
Jensen, A. L. G.....	Feb. 1925 ...	c/o Jensen and Milne, Finchley Lane, Hendon.
Jensen, L.....	May 1908 ...	N., Trafalgar Stores, Tenby, Pembroke-shire.

<i>Name.</i>	<i>Left Kew.</i>	<i>Present Position and Address.</i>
Jesson, Miss E. M. (<i>See Mrs. Cotton</i>).		
Jirásek, H.....	Jan. 1912 ...	Jardin des Plantes, Paris.
* Johns, W. H., N.D.H.....	Oct. 1909 ...	Supt., Public Gdns., Bermondsey, S.E.16.
* Johnson, G. C.....	Oct. 1914 ...	County Hall, Lewes.
* Johnson, J. T.....	Oct. 1904 ...	Supt., Govt. House Gardens, Barrackpore, E.B.R., Bengal, India.
* Johnson, W. H., F.L.S.....	Jan. 1898 ...	2 Beaconsfield Villas, Brighton.
Jones, C.....	Aug. 1923 ...	The Gardens, Broadlands, Romsey, Hants.
Jones, Charles S.....	Dec. 1893 ...	H.G., Oxford Lodge, Wimbledon Common.
Jones, F. A.....	Sept. 1909 ...	
Jones, George.....	Feb. 1892.	
* Jones, J. Dyfri.....	June 1900 ...	8 Acacia Rd., Bournville, Birmingham.
* Jones, Joseph.....	Feb. 1892 ...	Morne Bruce, Dominica, B.W.I.
Jones, Thomas.....	Sept. 1896 ...	340 Kew Road, Kew, Surrey.
Jonssen-Rose, N.....	Sept. 1888 ...	New York.
Jonsson, J. F.....	June 1909.	
* Jorgenson, C. L.....	May 1868 ...	H.G., Hardenberg, Saxkjöbing, Denmark.
* Joshua, Miss L., N.D.H....	Oct. 1918 ...	59, Langbourne Mansions, N.6.
Joyce, Randall.....	April 1910 ...	23 Borland Rd., Newlands, Peckham, S.E. 15.
Joyce, R. I.....	April 1908 ...	King's Acre Nurseries, Hereford.
* Judd, W. H.....	July 1913 ...	Arn. Arb.; and 19 May St., Jamaica Plain, Mass., U.S.A.
Junod, Samuel.....	Dec. 1896.	
* Juul, T.....	June 1917 ...	Bregentved, Haslev Station, Denmark.
Karrer, S.....	Aug. 1902 ...	Bellingstr, 13/11 Erfurt, Germany.
Kemp, Ernest.....	July 1898.	
Kemp, H. W.....	April 1926 ...	Hampton Court House, Hampton Court, Middlesex.
* Kempshall, Henry.....	Nov. 1889 ...	H.G., Abbotsbury Castle, Dorchester, Dorset.
Kennan, James.....	Jan. 1896.	
* Kermodé, Miss D. (<i>See Mrs. Halkerston</i>).		
* Kett, R., M.M.....	May 1908 ...	Chief Hort. Officer, I.W.G.C. (Eastern District), Sharia el Guneina, Cairo, Egypt.
Key, E.....	Jan. 1905.	
* Keys, A.....	July 1919 ...	Plant Introduction Gardens, Chapman Field, Coconut Grove, Florida, U.S.A.
Kidd Mrs. Franklin (Owen)	Sept. 1918 ...	54 De Freville Avenue, Cambridge.
Kidd, H. H.....	April 1909 ...	C., Bot. Gardens, Pietermaritzberg, Natal.
Kidd, William D.....	Mar. 1889.	
Kidley, A. W.....	Feb. 1907 ...	Aelybryn, Felinfoel, Llanelly, S. Wales.
* Kidwell, John.....	Mar. 1871 ...	Honolulu, Hawaiian Islands.
Kilburn, Jabez A.....	July 1890.	
Killick, E. H.....	Mar. 1923 ...	Burrows Lea Gardens, Shere, nr. Guildford.
Kime, Arthur.....	Feb. 1889 ...	N. and F., Stopsley Nursery, nr. Luton.
King, A. G.....	June 1912.	
* King, H. G.....	July 1909 ...	82 Kneller Rd., Twickenham, Mdsx.
Kinmont, D. B.....	Feb. 1911 ...	5 Cuthbert Rd., Westgate-on-Sea.
Klaaborg, H. J.....	Sept. 1913 ...	Gartneriet Langdallund, Kolding, Denm'k.
Klein, F. A.....	Feb. 1908 ...	24 Osterholz Tenever, Post Hemelinger, Bremen.
* Koeppé, P.....	Mar. 1904 ...	Ronsdorf a/Rhein, Germany.
* Krumbiegel, Gustav H.....	Mar. 1893 ...	Director of Agriculture, Bangalore, Mysore, India.
Kundig, J.....	June 1914.	
* Lamb, George.....	Nov. 1891 ...	M.G., "Memleket," Hextable, Kent.
* Lambert, J.....	June 1907 ...	Supt. B. G. University of Pennsylvania, Philadelphia, Pa., U.S.A.
Lamberton, W.....	Sept. 1925 ...	F., John Innes Hort. Inst., Merton.
Lambourne, George H.....	April 1877.	
* Lambourne, J.....	Mar. 1912 ...	Supt., Gov. Pltns., Teluh Anson, F.M.S.