

Vol. IV. No. XXXVII.

THE
JOURNAL
OF THE
KEW GUILD.

1930

197, Kew Road,
Kew, Surrey,

24th April, 1930.

Dear Sir or Madam,

The Annual General Meeting of the Guild will be held at the Clarendon Restaurant, Hammersmith, London, W., on Thursday, May 22nd, 1930, at 6-30 p.m. The Chairman of the Meeting will be Mr. John Coutts (President, 1929-30).

The Meeting will be followed by the Annual Dinner at 7-30 p.m., when it is hoped that Mr. F. S. Sillitoe, M.B.E., of Sudan, will preside.

The charge for the Dinner is 7/- per head (exclusive of wines), and it would be of considerable assistance if you would complete the attached form and forward it to me (together with a remittance) without delay. No actual tickets will be issued.

Yours very truly,

ERNEST G. DUNK,

Secretary.

Dear Sir,

It is my intention to be present at the Annual Dinner of the Kew Guild, at the Clarendon Restaurant, Hammersmith, W., at 7-30 p.m., on Thursday, May 22nd, 1930. I enclose herewith a remittance for to cover the cost of

Signed.....

Address.....

.....

.....

Date.....

Mr. E. G. Dunk,
Secretary, Kew Guild,
197, Kew Road,
Kew, Surrey.

"FLOREAT KEW"

THE
JOURNAL
OF THE
KEW GUILD,
AN ASSOCIATION OF
KEW GARDENERS Etc.
PAST AND PRESENT.

March, 1930.

LIST OF OFFICERS.

President: **John Coutts.**

Trustees: **Arthur W. Hill, C.M.G., M.A., Sc.D., F.R.S., F.L.S.,
F.N.Z. Inst., and T. W. Taylor.**

Treasurer: **C. P. Raffill, 193, Kew Road, Richmond, Surrey.**
(To whom all remittances should be addressed).

Secretary and Editor of Journal: **E. G. Dunk,
197, Kew Road, Kew, Surrey.**

Members of Committee:

Chairman of Committee: **A. D. Cotton, F.L.S.**

Retire 1930.

J. Coutts, Kew.
W. H. Johns, N.D.H., Bermondsey.
W. W. Pettigrew, Manchester.
D. Tannock, Dunedin.

Retire 1931.

R. L. Harrow, V.M.H., Edinburgh.
W. L. Lavender, Raynes Park.
C. P. Raffill, Kew.
T. Hunter, Gold Coast.
Miss E. M. Gunnell, Exeter.

Sub-Jforeman: **E. HEWITSON.**

Retire 1932.

A. D. Cotton, F.L.S., Kew.
H. Spooner, London.
A. Hosking, Merton.
B. P. Mansfield, New Zealand.

Retire 1933.

E. Nelmes, Kew.
S. W. Braggins, Italy.
F. G. Preston, Cambridge.
M. Free, U.S. America.

Student-Gardener: **J. H. STEWART.**

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Frontispiece.]



JOHN COUTTS

JOHN COUTTS.

Born on the Hill of Coull, within sight of Lochnagar in Aberdeenshire, on January 17th, 1872, Mr. JOHN COUTTS received his early training in horticulture under the able guidance of his father, a keen amateur gardener. He served his apprenticeship at Haddo House, in the gardens of the Earl of Aberdeen. From this establishment he went to Brentham Park, Stirling, under the able direction of Mr. David Bruce, where he remained for a period of two years before going to Newstead Abbey, Nottingham, where the knowledge he acquired in garden planning and development has since stood him in such good stead. Leaving Newstead Abbey, he obtained the position as general foreman at Grantully Castle, Perthshire. During his stay at the latter establishment he carried through many alterations in the design and general lay-out of the grounds and gardens.

On November 2nd, 1896, Mr. Coutts entered Kew as a Student-gardener where for a time he served in the flower garden, decorative and tropical departments. He was promoted to sub-foreman of the Palm House in October, 1898, from which department he was transferred a year later to a similar position in the Decorative Department.

Leaving Kew on September 15th, 1900, he was offered the position of head gardener at Killerton Park, Exeter, the beautiful Devonshire home of Sir T. D. Acland, Bart. The collection of choice trees and shrubs, and extensive collection of fruit, in particular apples and pears, have made the gardens at Killerton famous throughout the West Country. During the whole eight-and-a-half years when Mr. Coutts had charge here, many marked improvements were carried out, including the formation of an extensive Rose garden.

In March 1909, to the great regret of Sir Thomas and Lady Acland, Mr. Coutts was invited to return to Kew to take charge of the Decorative Department in succession to Mr. Osborn. He accepted the appointment and at the present time is still in charge of what constitutes the most attractive department of the Gardens, viewed from the standpoint of the general public. Originally designated as foreman, his status was changed to that of Assistant Curator in June 1922. In May, 1929, Mr. Coutts was appointed Deputy Curator on Mr. Taylor's promotion to the Curatorship, following Mr. W. J. Bean's retirement.

There have been few men connected with Kew who can justly claim to such a widespread knowledge of plants and their cultivation,

and he is a regular contributor to the leading horticultural journals. His treatise on *Lilium* which appeared in the *ROYAL HORTICULTURAL SOCIETY'S JOURNAL*, VOL. XLVIII (1923), pp. 22-37, is too well-known to be commented on in these pages. As Chairman of the Kew Mutual Improvement Society since 1911, his widespread knowledge has been freely and willingly given to Kewites during this period, and his able counsel at all times is known to all. An apt appreciation of his Chairmanship appeared in this *JOURNAL*, VOL. IV., No. XXX (1923) pp. 160.

Other instances which go to show that Kew and Kewites hold a very warm place in his heart are many, but reference must be made to the services rendered to the Kew Guild as its Honorary Treasurer from 1910-1925. Only those who have held this office can fully realise the time which this duty necessitates. The Guild Benevolent Fund and later the Watson Memorial Educational Fund (which he initiated and fostered) have always been brought to the notice of all members, as reference to Mr. Coutts' speech at the 1929 Annual Dinner, published in this issue, will emphasise.

To conclude this short article without some reference to Mrs. Coutts would be to minimise our appreciation of him, as it is well known that in a quiet, unassuming way she has always supported her husband in his many activities and in particular their kindness of heart in welcoming to their fireside many of those lady members of our Guild who stepped into the breach while the war of 1914-18 was in progress.

Among Mr. Coutts' activities we must not forget to mention that he is always in demand as a lecturer, though his leisure moments do not permit of much time being devoted to this sphere.

His recreation is bowls, and as a member of the Civil Service Bowling Club, as well as the Club which functions in the Gardens, his prowess is well known. It is believed also that a round of golf does not come amiss to our President.

To enlarge on Mr. Coutts' good points will only tend to embarrass him but his genial and kindly manner and his willingness to render help and advice to those who would seek his counsel are traits too well known in his character to be commented on at length in these brief notes.

E.G.D. 1929.

THE ANNUAL GENERAL MEETING.

THE Annual General Meeting of the Guild was held at the Clarendon Restaurant, Hammersmith, London, W., on Thursday, May 23rd, 1929, at 6-30 p.m. The Chair was occupied by MR. W. HALES, A.L.S., in the absence of the retiring President, MR. W. N. SANDS, F.L.S., and approximately fifty members were present.

The Minutes of the Annual General Meeting held on May 24th, 1928, having been published in the 1929 issue of the JOURNAL, it was proposed by MR. COURTTS, seconded by MR. LAVENDER, that they be passed as read. This proposition was unanimously agreed to.

The Chairman then called on the Secretary to read the Annual Report and submit the Balance Sheets of the various accounts for approval. On the proposal of MR. W. H. JOHNS, supported by MR. H. SPOONER, it was unanimously resolved that these, having received the attention of the Committee, be passed. In submitting the proposal to the Meeting, MR. HALES mentioned the valuable services rendered to the Guild by MR. R. F. WILLIAMS as Hon. Treasurer, and it was resolved that a vote of thanks be recorded in the Minutes of the Meeting.

MR. J. G. MURRAY, F.L.S., supported by MR. A. HOSKING, moved that MR. J. COURTTS be asked to accept the office of President for the ensuing year, a proposal that was carried unanimously and with acclamation. MR. COURTTS briefly voiced his thanks for the honour thus accorded him. Before the Meeting closed, MAJOR T. F. CHIPP, M.C., supported by MR. H. SPOONER, referred to the loss the GUILD had sustained in the death of SIR. T. W. THISELTON DYER, K.C.M.G., etc., and moved a vote of sympathy with Lady Thiselton Dyer.

At the conclusion of the Meeting, the Secretary referred to Mr. W. Hales' retirement from the office of Chairman of Committee, mentioning in particular the tactful way in which he had always directed them at their meetings.

The Meeting closed at 7 p.m.

THE KEW GUILD DINNER, 1929.

THE Annual Dinner was held at the Clarendon Restaurant, Hammer-smith, London, W., on Thursday, May 23rd, at 7-30 p.m., when an attendance of 109 members was presided over by Mr. John Coutts. The tables were tastefully decorated with Darwin Tulips in varying shades, and Azaleas.

An excellent dinner was served and the arrangements were very satisfactory to all concerned.

The Loyal Toast having been duly honoured, Mr. John Coutts proposed the Toast of "The Kew Guild." In the course of an interesting oration Mr. Coutts remarked :

"I must first thank you for the honour conferred upon me by electing me as President of such a select and exclusive Society, and to express my pleasure at seeing such a large number of members gathered together on this occasion, including so many from Overseas. Speaking from a personal point of view, I fail to see why one should on such occasions be expected to make a speech and make oneself more or less a nuisance to a lot of innocent people gathered together for a few hours' social intercourse. Bearing this object in mind, therefore, I will endeavour to be as brief as possible.

I have now had some thirty years' experience of Kew and Kew-men and during that period there have been many changes. During this time I have served under three Directors and three Curators, while the fourth, our mutual friend Mr. T. W. Taylor has just succeeded Mr. W. J. Bean, who has retired on reaching the age limit. In passing I feel that I am but expressing the view of Kewites in all parts of the world in conveying to Mr. Bean our best wishes in his retirement.

"Compared with thirty or even twenty years ago, Kew as an establishment has seen many improvements ; these include more reasonable working hours, (this not always an easy problem when the care of living plants in such variety are involved) ; a more comprehensive and wider range in the courses of lectures and demonstrations than obtained previously previously, etc.

"Previous speakers at these dinners have always been very laudatory of the Kew Guild and its members, and to-night I do not intend to launch out in praise of our Society or those who constitute it, for it is but right that you should not only take a pride in the Guild, but in yourselves also. In this way you will be able to strive to maintain and increase the prestige of Kew and its sons (and daughters too). There are many ways in which this can be done, in particular my appeal to-night is for the ears of those of us who have years of experience behind us. To those I would say, take an interest in our younger members and whenever a chance comes, help them with advice—when asked for, as it often is—and, furthermore, as far as lies in your power to situations. Although the Guild has admirably fulfilled its original object inasmuch as it is a link between past and present Kewites yet, personally, I feel that

in the past some of us, as members, have not always done our best to forward the objects of the Guild. An example of this is evident when one considers the poor response made since the inauguration of the Educational Fund. The prominence given to this Fund at General Meetings and in the Journal raised hopes that the sum of £1,000 (which was the aim of the organisers) would be very readily subscribed. How far short our efforts were in this endeavour can be best judged when it is realised that little more than £100 was forthcoming.

"Failure attended this appeal, but I do not intend to allow the Guild Benevolent Fund to fall into obscurity. As all are aware, this Fund has been the means of permitting us to do excellent work in the past in assisting members who, through no fault of their own, were temporarily in straitened circumstances. Only two years ago a generous response was made on behalf of an old Kewite and it is gratifying to record that the assistance we were able to give was sufficient to enable the recipient to live with at least some degree of security from want. Very little is received from members for this Fund and I appeal to you not to forget to forward your subscription, however small, to our Hon. Treasurer, who will thankfully acknowledge it. Before leaving the subject of our Benevolent Fund, may I crave your indulgence by mentioning a recent case where real help was given and the very satisfactory result, not only to the member concerned, but subsequently to the accounts of the Funds. A young student-gardener obtained a position in one of our Colonies. He was an orphan and had no living relations to assist him. It was felt that it was not proper that a young man should arrive in a distant country without some money for his immediate needs. The Guild Committee were approached and it was unanimously decided that an advance should be made from the Benevolent Funds. I am pleased indeed to say that not only has the loan been repaid, but with it a donation of £5 for the Fund from which the assistance to him had been forthcoming. Surely this is an example to all of us and should be an incentive to others to support such a cause. Being a fellow countryman, I cannot refrain from mentioning that this lad was a Scot, and an Aberdonian at that!

"To the older members of the Guild who, like myself, have few, if any, illusions left, it would be presumptuous on my part to tender advice. May I, however, express a hope that we may all grow old gracefully and, so far as possible, maintain a youthful outlook on life. Let us look to the welfare of the younger generation of whom so many hard things are said to-day. Youth has to carry the torch to-day in our stead and how this is to be done depends largely on the inspiration that we give the young men of to-day. Youth is always credited with a divine discontent, countless hopes and fears, more so than we older men, yet it is usually eager for advice. Whether the advice when tendered is taken advantage of is another question, yet I would say we should always be ready to give such counsel as lies within our power.

"If I may on this occasion give to the younger generation a few words of advice, I would at the same time remind you that as workers in an Establishment that has made its influence felt in many parts of the world, it is up to you to carry on and still enhance the prestige of Kew. In the past, Kew men have been the pioneers in our Colonies and Dependencies, "Martha's Sons," in fact, making smooth the way for those who come after them. To attain success in whatever direction you decide your life-work will be, you must take a keen interest in your daily duties, and whatever your tasks may be, do your utmost to do them well. It may not always be a congenial task that is imposed, but remember it may be a means to an end. Be at all times cheerful, obliging and obedient, and act promptly when reasonable orders have to be carried out.

"Self-control is an essential factor if one is to hold the reins of office, no matter to how small a degree. Be courteous to all men, whatsoever their station in life. Learn to distinguish between Civility and Servility. Be clean and smart, not only in your personal appearance but in your general conduct also. Read widely and in every possible way strive to broaden your mind and your outlook on life generally. Above all, remember that your future is very much what you may care to shape it, for, having missed your opportunities, it is no good sitting down and blaming everything and everybody for your seeming failure.

"I have given enough advice on this occasion, and can only conclude by wishing you all the success in life that you deserve."

During the interval between the speeches, the Mutual Improvement Society's prizes, and the Dümmer Memorial and Matilda Smith Memorial prizes were presented with appropriate remarks by the President.

Mr. Harding was in fine form and delighted the Members with songs ably assisted by the accompanist at the piano.

A prolonged interval was again arranged and at the conclusion of it, Mr. W. Hales, A.L.S., proposed the toast, "Our President" in the following speech:

"I rise with much pleasure to propose the toast of our President for the year—Mr. John Coutts.

"Although I wish this toast had been in abler hands, I can possibly claim to have known Mr. Coutts for as long a period as anyone present, since I well remember him coming to Kew from the far north of Scotland, now nearly 33 years ago, in the autumn of 1896. Having had the privilege of his friendship throughout this long period, and having also been able to keep in touch with his work at Kew and the wider field beyond, I can therefore speak of both Coutts and his work from an inside knowledge.

"To the older generation of Kew men our President is known as a good companion and a loyal friend, and would be best described in city terms as a "white man" who, by example and precept,

stands as a pattern well worthy of our emulation. Coupled with this, he is as you all know, of a very retiring disposition and never seeks the limelight, which to those of us who know him best, stands for great strength of character and assurance in his own great capabilities to carry through any task to which he applies himself.

“Possibly those of you who belong to the younger generation have learned that our President does not ‘suffer fools gladly,’ and upon occasion perhaps through sins of omission or commission, have learnt in no uncertain manner what he thinks of you. I venture to think, however, that if it has ever been your privilege to listen to one of these discourses, you have all, on due reflection, felt that it has been a real education for you and, like the labourer who had to be discharged for some breach of rules by the late Geo. Nicholson, said that “Nick” did it in such a gentlemanly manner that he felt he had to say ‘thank you’ for his discharge.

“Mr. Coutts has worked hard for many years as Chairman of your Mutual Improvement Society for the advancement of the younger men at Kew and has never failed to encourage by his sympathy and the giving forth from the vast storehouse of his knowledge to those who needed encouragement or help.

“For our Guild he has also been a most strenuous worker, first as a member of the Committee and for a long period as our Treasurer which, as Mr. Williams who has just laid down his office says he calculates, in order to carry out these duties thoroughly, fully ten days in the year are required.

“You all know how deeply our President has been interested in the educational side of the young gardeners and in season and out of season, has preached that those who wish to attain the best position in their profession should steadfastly set before themselves, not only the object of acquiring knowledge of the practice of their calling, but also those sciences which are germane to it since it is only by the co-relation of these that in these days of competition can they hope to worthily uphold the best traditions of their ‘Alma Mater.’

“Such, briefly then, ladies and gentlemen, is the man who has honoured our Guild by becoming its President and I am sure I am voicing your views when I say that we rejoice in having as our President one who has worked so hard to uphold the prestige of Kew and Kew men both at home and abroad, and I ask you to join with me in wishing him a successful year as President, good health and long life.”

The toast was drunk with full musical honours and Mr. Coutts briefly voiced his deep appreciation to all present for the honour accorded him, and to those in particular who had so ably carried out the arrangements, which had terminated in such a successful gathering.

ANNUAL REPORT, 1928-1929.

THE Committee have much pleasure in submitting for the consideration of the Members of the Guild, the Annual Report for the year ending April 30th, 1929.

The Annual General Meeting of the Guild was held in the Clarendon Restaurant, Hammersmith, W.6, on May 24th, 1928, at 6-15 p.m. The Chairman of the Meeting was Mr. Walter Irving, and he was supported by upwards of eighty Members. The Meeting was followed by the Annual Dinner, where Mr. W. N. Sands, F.L.S., presided over an attendance of ninety-four Members.

The Members of the Committee who retire are :—Messrs. J. H. Holland, W. S. Sharp, T. Dinn, W. H. Judd. The following have been nominated to fill the vacancies thus created :—Messrs. E. Nelmes, S. W. Braggins, F. G. Preston and M. Free. Messrs. E. W. Studley and L. B. Creasey will continue to represent the Subforemen and Student-gardeners respectively. Mr. R. F. Williams has resigned his position as Hon. Treasurer, and the Committee take this opportunity of placing on record their appreciation of the able manner in which he has always discharged the onerous duties of this office. Mr. C. P. Raffil has consented to be nominated as Hon. Treasurer for the ensuing year.

Mr. E. G. Dunk has agreed to fill the office of Secretary-Editor for a further year, and Members are reminded that he would welcome their co-operation in the compilation of the *Journal*, either by helpful suggestions or by the actual copy for ensuing issues. Messrs. W. H. Young and A. Edwards are recommended as Hon. Auditors for the coming year.

The Committee wish to call attention to the falling-off in the amount received as annual subscriptions. During the past year, two issues of the *Journal* have been published, yet subscriptions have only totalled £29 4s. 11d., of which some £16 was received from local sources, *i.e.*, the Kew Staff. The principal source of income has been derived from advertisements which have appeared in the *Journal*. The amounts received from advertisers in the 1928-29 issues have amounted to £51 5s. 0d. and £40 19s. 3d. respectively, with a sum of £11 12s. 6d. outstanding on April 30th, 1929 (*N.B.*—Since this date £8 12s. 6d. has been received of this sum, and the balance is expected to come to hand at an early date). The Committee desire that the *Journal* shall maintain its present high standard, but unless Members forward their current subscriptions and any accumulated arrears, it is feared that future issues will of necessity be reduced in size.

Since the publication of the 1927-28 Report, death has taken many distinguished Kewites from our midst, and we regret to record the passing of Sir W. T. Thiselton-Dyer, K.C.M.G., C.I.E., F.L.S., etc. ; Dr. L. C. Burrell, M.A., M.B., B.C. ; William Falconer ; Thomas C. Forsyth ; Frank J. Evans ; Harry Holley ; Ernest Horton ; Robert Kett ; and Phillip Bolt.

The Kew Guild Watson Memorial Educational Fund has a small sum available for assisting Members meriting such help; those desirous of further details should communicate with the Secretary.

In 1926, a loan was made to Mr. A. W. Anderson on his departure for New Zealand. Mr. Anderson has not only repaid the loan, but has forwarded a donation of £5 to the Guild Benevolent Fund, and the Committee desire to record their warm appreciation of his generosity.

Subscriptions to the Educational Fund and the Benevolent Fund will be gladly received by the Hon. Treasurer.

The receipts for the year amount to £156 10s. 1d., and the expenditure to £234 18s. 6d. ; it should be borne in mind that this heavy expenditure is entirely due to the publication of two issues during the past year.

Wm. Hales.

Chairman of Committee.

May 14th, 1929.

BALANCE SHEET—YEAR ENDING 30TH APRIL, 1929.

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
Balance from 1927-28 A/c. *	151	18 6	Transfer of Balance of War Memorial Fund to Benevolent Fund ...	29	0 6
Life Subscriptions ...	17	3 0	Subscriptions:—		
Annual Subscriptions:			Gardeners' Royal Benevolent Institution ...	1	1 0
Arrears up to and including 1927	2	14 6	Royal Gardeners' Orphan Fund ...	1	1 0
Subs. for 1928	14	11 2	Funeral Wreath ...	1	4 0
„ 1929	10	12 3	Printing:—		
„ in adv.	1	7 0	Journal for 1928	80	13 5
	29	4 11	„ 1929	74	14 2
Special Sales of the Journal	1	7 11	Receipt Book	0	12 6
Dividend on £300 5% New South Wales Stock—less tax ...	12	0 0	Postages:—		
Dividend on £26 6s. 3d. 5% War Stock ...	1	6 2	Journal for 1928	5	16 3
Bank Interest ...	3	0 4	„ 1929	5	12 11
Advertisements:			Secretary's (miscellaneous)	4	4 3
1928 Journal	51	5 0	Treasurer's (miscellaneous and incidental expenses)		
1929 „	40	19 3		0	18 6
	92	4 3		16	11 11
Balance from 1928 Dinner A/c	0	3 6	Secretary's Honorarium—		
			1927 ...	15	0 0
			1928 ...	15	0 0
				30	0 0
			Balance ...	73	10 1
	£308	8 7		£308	8 7

*Includes Balance of War Memorial Fund, £29 0s. 6d.

CAPITAL ACCOUNT, as on the 30th April, 1929.

LIABILITIES.			ASSETS.		
	£	s. d.		£	s. d.
Thomson Bequest ...	92	8 6	£300 New South Wales 5% Stock (1935-1955) ...	300	0 0
233 Life Subscribers of £1 at two-thirds full rate ...	155	6 8	£26 6s. 3d. 5% War Stock (1929-1947) ...	26	6 3
204 Life Subscribers of £2 at two-thirds full rate ...	272	0 0	Journals in Stock (valuation)	15	0 0
			Valuation of Typewriter, after allowing for depreciation ...	8	8 0
			Advertisements outstanding —1929 Journal ...	11	12 6
			Balance at Bank and in Cash	73	10 1
			Liabilities over Assets	84	18 4
	<u>£519</u>	<u>15 2</u>		<u>£519</u>	<u>15 2</u>

BENEVOLENT FUND.

BALANCE SHEET, Year ending 30th April, 1929.

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
Balance from 1927-28 A/c.	22	8 10			Nil
Balance of War Memorial Fund transferred from Guild A/c. ...	29	0 6			
Repayment of loan to Member ...	7	0 0			
Donations ...	6	5 0			
Bank Interest ...	0	18 2	Balance ...	65	12 6
	<u>£65</u>	<u>12 6</u>		<u>£65</u>	<u>12 6</u>

DÜMMER MEMORIAL FUND.

BALANCE SHEET, Year ending 30th April, 1929.

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
Balance from 1927-28 A/c.	0	17 6	Presentation volumes to two prize-winners for best collections British Botany Club 1927 ...	4	4 0
Dividend on 4% Funding Loan ...	2	16 0			
Donations for the purchase of an additional prize for British Botany ...	2	5 0	Balance ...	1	14 6
	<u>£5</u>	<u>18 6</u>		<u>£5</u>	<u>18 6</u>

CAPITAL ACCOUNT, on the 30th April, 1929.

LIABILITIES.			ASSETS.		
	£	s. d.		£	s. d.
Balance of Assets ...	62	12 6	Value of £70 Stock, 4% Funding Loan ...	60	18 0
	<u>£62</u>	<u>12 6</u>	Balance at Bank and in Cash	1	14 6
				<u>£62</u>	<u>12 6</u>

EDUCATIONAL FUND.

BALANCE SHEET, Year Ending 30th April, 1929.

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
Balance from 1927-28 A/c.	128	19 3	Purchase of £100 5% War		
Donation	1	0 0	Stock (1929-1947) ...	102	7 6
Dividend 5% War Stock* ...	2	10 0	Commission on purchase		
Bank Interest	2	3 0	transaction	0	4 6
			Balance at Bank	32	0 3
	<u>£134</u>	<u>12 3</u>		<u>£134</u>	<u>12 3</u>

*Dividend payable 1st June and 1st December.
half year.

Amount shown is for the first

CAPITAL ACCOUNT, as on the 30th April, 1929.

LIABILITIES.			ASSETS.		
	£	s. d.		£	s. d.
Balance of Assets	132	0 3	£100 5% War Stock (value		
			at par)	100	0 0
	<u>£132</u>	<u>0 3</u>	Balance at Bank	32	0 3
				<u>£132</u>	<u>0 3</u>

MATILDA SMITH MEMORIAL PRIZE FUND.

BALANCE SHEET, Year ending 30th April, 1929.

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
Balance from 1927-28 A/c.	2	10 0	Balance at Bank and in Cash	5	0 0
Dividend on £50 L.C.C. 5%					
Stock	2	10 0			
	<u>£5</u>	<u>0 0</u>		<u>£5</u>	<u>0 0</u>

CAPITAL ACCOUNT, as on the 30th April, 1929.

LIABILITIES.			ASSETS.		
	£	s. d.		£	s. d.
Balance of Assets	55	0 0	£50 L.C.C. 5% Stock (value		
			at par)	50	0 0
	<u>£55</u>	<u>0 0</u>	Balance at Bank and in Cash	5	0 0
				<u>£55</u>	<u>0 0</u>

DINNER ACCOUNT, 1928.

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
97 Tickets: 95 at 7/-, 2 at			94 Dinners at 6/6	30	11 0
7/6	34	0 0	Printing*	2	5 6
			Postages	0	15 0
	<u>£34</u>	<u>0 0</u>	Incidental Expenses	0	5 0
			Balance to Guild A/c. ...	0	3 6
				<u>£34</u>	<u>0 0</u>

(*Circulars, Menu Cards, Annual Report and Financial Statements).

The foregoing Accounts have been Audited and found correct—

R. F. WILLIAMS, Hon. Treasurer.
E. G. DUNK, Secretary.A. OSBORN
W. H. YOUNG.

} Hon. Auditors.

13th MAY, 1929.

MUTUAL IMPROVEMENT SOCIETY SESSION 1928-1929.

THE Annual General Meeting was held in the Library on September 3rd 1928 when the following officers were elected.

Mr. J. Coutts and Mr. W. Taylor were unanimously elected chairman and vice-chairman respectively. Mr. Ovenden was elected secretary and Mr. Everitt assistant secretary with Messrs. Knight, Poulter, and Cook on the executive committee.

Mr. Ovenden left shortly afterwards to fill a post at Torquay, and also Mr. Everitt, who went to S. Africa. Mr. E. W. Studley was elected to fill the vacancy, with Mr. Hewitson as assistant secretary.

Twenty meetings were held during the session, with an average attendance of 30.45 members. This compares very favourably indeed with former years and shows a decided increase over the previous year. The Society is indebted to the Director for his very interesting lantern lecture "A visit to Australia and New Zealand," and also to Mr. T. A. Sprague, Mr. W. Dallimore, Mr. C. P. Raffill and Mr. W. A. Edwards, for their help in making an interesting syllabus by giving lectures, many of which were illustrated by lantern slides.

Fifteen papers on horticultural subjects were contributed by sub-foremen and student-gardeners. The papers throughout were of an extremely high standard, and showed keenness and care in preparation, and were in many cases backed by specialised knowledge. The average number of members taking part in discussions was 8.45 a decrease on the previous session, which was 10.6. Discussions generally, however, were more evenly distributed, which makes the outlook very hopeful.

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. E. W. Studley, and the Society's Prize to Mr. W. Creasey.

The Society is extremely fortunate in having as its chairman Mr. J. Coutts; records available show that this is his 17th consecutive session in office. His thorough knowledge and experience in all horticultural matters are a great asset to the Society generally, and his general kindness and help are always a source of encouragement to the members.

Two Summer Outings were arranged, to the Chelsea Physic Gardens where we were conducted round the gardens by Mr. W. Hales, the Curator, and to Sutton's Seed Trial Grounds at Slough, when Mr. W. Balfour kindly showed us round. Both these visits were very enjoyable and it is hoped that those who participated in them gained much valuable knowledge.

SYLLABUS.

1928.			
Oct	8th.	*A visit to Australia and New Zealand.	Dr. A. W. Hill.
"	15th.	Culture of Luxury Fruit.	Mr. B. Moran.
"	22nd.	Plant Adaptation.	Mr. E. Hewitson.
"	29th.	Bee Keeping.	Mr. T. A. Arnold.
Nov.	5th.	Peaches.	Mr. R. Mason.
"	12th.	*Nomenclature.	Mr. T. A. Sprague.
"	19th.	Chrysanthemums.	Mr. S. A. Pearce.
"	26th.	Vegetables.	Mr. G. A. Davies.
Dec.	3rd.	Gardeners and their Opportunities.	Mr. W. Dallimore.
"	10th.	The Propagation of Trees and Shrubs by cuttings.	Mr. F. P. Knight.
"	17th.	Economic Plants.	Mr. J. H. Turner.
1929.			
Jan.	7th.	*Flowering Trees and Shrubs.	Mr. C. Raffill.
"	14th.	Hardy Fruit Culture.	Mr. Steele.
"	21st.	The Cost accounting of Floristry.	Mr. Carr.
"	28th.	*Cambridge Botanic Gardens.	Mr. Porter.
Feb.	4th.	Municipal Forestry in New Zealand.	Mr. Tannock.
"	11th.	*Park and Garden Construction.	Mr. Edwards.
"	18th.	The Vine.	Mr. Brown.
"	25th.	Succulents.	Mr. Farley.
March	4th.	The Manufacture of superphosphate and sulphate of ammonia and its effect on plant growth.	Mr. J. Stewart.
"	11th.	Secretary's Report. * Lantern Lecture.	
			E. W. STUDLEY, Secretary.

BRITISH BOTANY CLUB, 1929.

THE ANNUAL GENERAL MEETING was held in the Lecture Room on March 25th, 1929, when the Secretary and Committee were elected. The Club itself was made up of eight first-year students.

The Secretary, Mr. R. H. Mason, who was elected, resigned from Kew a month later and Mr. E. Hewitson was nominated in his stead. The committee were made up of Messrs. Smith, Arnold, and Parsons. Evening rambles to Sheen Common, Teddington Sand Pits, through the Queen's Cottage Grounds, and along the Brent and Thames took place as in former years. Several of these evening rambles being supported by non-members.

In addition there were two half-day excursions, one to Burnham Beeches, conducted by Mr. Milne-Redhead, and one to Guilford, conducted by Mr. E. Nelmes. The full day trip to Milford-on-Sea was under the able guidance of Dr. W. B. Turrill.

Drastic alterations in the rules of the Club were made at the instigation of the Director and accepted by the Committee, to ensure that no rare species should be collected in future. In awarding points the quality rather than the quantity of specimens submitted would be the determining factor. In view of this, Rule 7 had to be deleted and collections submitted for the Dümmer Memorial Prize should not be less than 150 nor exceed 200.

As these changes were proposed after the 1929 Club had been formed and collecting had commenced, the programme for the past season was more of a transitional nature. Programmes for future years will be different in constitution at the discretion of Mr. E. Nelmes in conjunction with the committee and not merely comprise a collection of British Flora. For the season 1930 it is suggested that : " Collections of 50 well-dried, labelled and annotated sheets accompanied by notes and sketches illustrating vegetative multiplication are to be submitted.

Collections were sent in for examination by Messrs. Brown, Cocker, Pearce, Porter and C. Robinson, and in every case were well prepared and mounted. Mr. Porter's collection was adjudged the best and gained 95 points out of a possible 100. In addition to gaining a certificate, Mr. Porter wins the Dümmer Memorial Prize, to be presented at the Annual Meeting of the Kew Guild, 1930. Certificates were awarded to the other four competitors whose collections gained 85 points each.

The thanks of the Club are due to all those who have given their services and time and especially to Mr. E. Nelmes, who has always given us sympathetic help and consideration.

E. HEWITSON, *Hon. Sec.*

January 31st, 1930.

THE CRICKET CLUB, 1929.

THE ANNUAL GENERAL MEETING was held in the Library on the 12th April, 1929, when the following members were elected to hold office for the season :— Mr. L. A. Lee (Hon. Secretary) Mr. G. C. Stedman (Captain), Mr. C. F. Coates (Vice-Captain), Messrs. W. Taylor and L. Stenning (Members of Committee). In August Mr. Lee resigned his duties as Secretary. At a general meeting held in the Library on the 19th August, 1929, Mr. S. A. Pearce was elected to fill the vacancy.

A fixture list of 24 matches was arranged, three of these being Sunday fixtures. The weather on the whole was good and only on two or three occasions were we really troubled by rain. Of the 24 matches played, 16 were won, 5 lost and the remaining 3 drawn. In winning 16 matches out of 24, we can safely say that this has been one of the most successful seasons for some years, although in 1926, 17 matches were won, but on this occasion 28 were played.

As in previous years the match versus The Staff was played on Kew Green on the 5th June. This year the weather was not kind to us, for rain commenced before we could make a start ; however, this eased up sufficiently for us to commence the game about half-an-hour after scheduled time. Winning the toss, The Staff (who were led as in previous years by Mr. J. Hutchinson) decided to bat first. This was not an easy job owing to the sodden wicket and the opening batsmen could do nothing, the first wicket falling when

only 4 runs were on the board. Then followed a procession of batsmen and only 9 runs were scored when the 5th wicket fell. A partnership between Flack and Secker, however, made appearances brighter for the Staff. The 10th wicket fell for the total of 34. Mr. Secker was the principal scorer with 20.

Bowling for the Students, Stedman captured 6 wickets for 20 runs and Arnold 4 for 13. Rain again made play impossible and tea was decided upon. As in former years, we were cordially invited by the Director (Dr. Hill) to tea on the Lawn Tennis Courts enclosure, where Miss Hill was our genial hostess.

After partaking of a variety of good things, we went back to the cricket tent, with little hopes of any further cricket as rain continued to fall heavily. This, however, eased up sufficiently for another start to be made and the Staff took the field hoping to make as big a mess of our batsmen as we did of theirs, but these hopes were not fulfilled as our opening batsmen set about their bowling in a determined manner and, in spite of the state of the pitch, we reached the Staff's total for the loss of 3 wickets. Although rain continued to fall slightly, stumps were not drawn; apparently Mr. Hutchinson and his side thought that as they had got wet shirts they might as well continue the game, which closed when our 10th wicket fell for 115. Our chief scorers were:— Messrs. Rudd 34, Arnold 18, and MacGregor 18. Bowling for the Staff, Sealy took 4 wickets for 37 runs, Stenning 2 for 13, and Secker 1 for 19. Although the weather was so bad, everyone thoroughly enjoyed the game and we were in high spirits at having avenged the defeat of 1927.

Another match of which a short description is necessary was played on Kew Green on July 24th, when Edinburgh Botanic Gardens Cricket Club visited us. The game was played in brilliant sunshine and after a very enjoyable game we were just beaten by the margin of 5 runs, the scores being:— Royal Botanic Gardens, Edinburgh, 68, Royal Botanic Gardens, Kew, 63. Our principal scorer was Boyce with 22 runs, while Holm was highest for Edinburgh with 35. Bowling for Kew, Stedman captured 9 wickets for 33 runs and Arnold 1 for 15. Bowling for Edinburgh, McIntyre took 4 wickets for 25 runs, and Pubble 6 for 34. It is hoped that we shall be able to pay a return visit to Edinburgh during the coming season.

The annual matches with Cliveden as in previous years were very enjoyable. In the first match at Cliveden on May 18th, we were beaten by 46 runs. We avenged this defeat in the return match on Kew Green on Wednesday, July 17th, the scores being Cliveden 45, Royal Botanic Gardens, Kew, 76 for 6, our chief scorers being Coates 29 and MacGregor 17 not out.

The results of other matches were as follows:—

Wins against

St. Mary's C.C. (1). Oakleigh C.C. (2). Kew II (1). Victoria Working Men's Club (1). Aldenham House Gardens (2). Chrysler Sports Club (3). John Innes Institution (1). Richmond Electric (1). Kearly and Tonge C.C. (1). The Rest of Gardens (1).

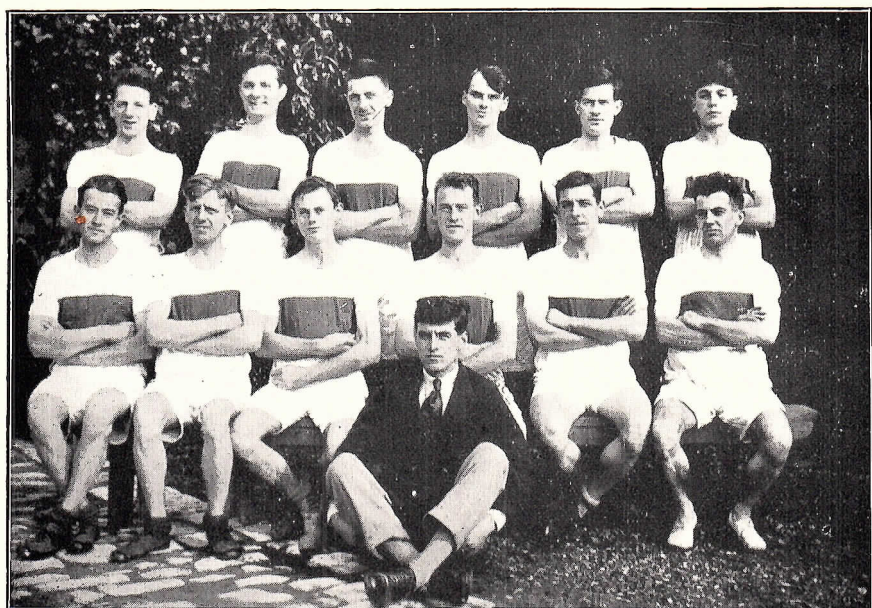


ROYAL BOTANIC GARDENS, KEW, CRICKET CLUB.

Season, 1929.

L. Stenning, J. Taylor, L. A. Lee, W. Taylor, J. A. Mann, T. A. Arnold, C. McGregor, A. Wilson,
C. Bate, P. E. Boyce, C. F. Coates, G. E. Taylor, G. Stedman, S. A. Pearce, T. Lomas.

(Photo. reproduced by the courtesy of Mr. P. W. German).



ROYAL BOTANIC GARDENS, KEW, RUNNING CLUB.

Season, 1929.

E. Hewitson, B. J. Moran, H. C. Hildyard, W. Porter, A. Wilson, J. Hayder,
J. Parsons, C. W. Rudd, P. E. Boyce, A. J. Brown, G. A. Davis, B. W. Allison,
J. Smith

Losses against

Sutton's C.C. (1). Victoria Working Men's Club (1). St. Luke's C.C. (1).

Drawn games

Chrysler Sports Club (1). Aldenham C.C. (1). G.W.R.C.C. (1).

Batting honours went to :— Messrs. Boyce, 51 scored against the Rest of Gardens, Coates, 42 against Kearly and Tonge C.C., Pearce, 40 against Kew II, Rudd, 34 against The Staff.

Bowling honours :—W. Taylor, 6 wickets for 9 against Aldenham House Gardens, Stedman, 5 for 9 against Chrysler Sports C.C., Arnold, 5 for 12 against Chrysler Sports C.C., Pearce, 4 for 1 against Kew II.

ROYAL GARDENS CRICKET CLUB, KEW.

BATTING AVERAGES, SEASON 1929.

Played over 10 Innings—

Name.	Innings.	Times Not Out.	Most in an Inns	Total runs.	Average
COATES.....	17	1	42	250	15.62
RUDD	15	2	34	182	14.00
MACGREGOR.....	22	2	26	212	10.60
BOYCE.....	17	4	51 not out	122	9.38
STENNING.....	18	—	33	145	8.05
TAYLOR, W.....	21	1	31	155	7.75
PEARCE.....	19	1	40	131	7.27
BATE.....	15	—	22	103	6.86
TAYLOR, J.....	17	3	18	93	6.64
ARNOLD	19	—	19	124	6.53
STEDMAN	22	7	19 not out	83	5.53
MANN	19	—	21	105	5.52

10 Innings and Less.

Name.	Innings.	Times Not Out.	Most in an Inns.	Total runs.	Average.
SECKER.....	8	1	20	66	9.42
LOMAS	2	—	9	9	4.50
TAYLOR, G.....	10	4	8	24	4.00
LEE.....	5	—	7	18	3.60
SEALY. ...	9	1	17 not out	26	3.25
YOUNGER.....	3	1	2	4	2.00

Highest Score for an Innings, 193

Lowest „ „ „ 41

Runs for—2,303.

Runs against—1,681.

ROYAL GARDENS CRICKET CLUB, KEW.
BOWLING ANALYSIS, SEASON 1929.

50 or more Overs.

Name.	Overs	Maidens	Runs	Wickets	% age
STEDMAN	167.3	34	500	87	5.74
ARNOLD	159.2	28	363	62	5.85
TAYLOR, W.....	108	24	229	39	5.87

Less than 50 Overs.

Name.	Overs	Maidens	Runs	Wickets	% age
PEARCE.....	5	—	9	4	2.50
BATE	6	3	23	5	4.60
MACGREGOR.....	2	—	5	1	5.00
TAYLOR, J.....	4.3	—	21	4	5.25
SECKER.....	27	4	68	9	7.55
MANN	24	3	54	6	9.00
LEE	1	—	2	—	—
RUDD	2	—	9	—	—

CATCHES—

Name.	No.	Name.	No.
MACGREGOR	13	TAYLOR, J.....	8
STEDMAN	8	BATE	4
ARNOLD	7	PEARCE	4
STENNING.....	7	SECKER	3
TAYLOR, W.....	7	LEE.	3
COATES	6	SEALY	2
BOYCE	5	MANN.....	2
RUDD.....	5	YOUNGER	1

STUMPING.—

COATES	18	BATE	1
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The members of the Club wish their appreciation to be recorded of the continued support, both financially and otherwise, by the friends among the Staff of the Gardens.

S. A. PEARCE,
Hon. Secretary.

FOOTBALL CLUB ANNUAL REPORT.

In submitting the report for the season 1928-29 I have pleasure in stating that this season the club has been again firmly established and will be remembered as a most enjoyable one by the players, for the fact that weather conditions were excellent on the occasion of all matches and only one fixture being cancelled owing to frost.

In all, twelve matches were played, six being won, five lost and one drawn. Although more matches were won than lost, the goals scored against us were in the majority, being 28 for, against 47, no fewer than 28 of these being scored in the three games played against teams in the Richmond League, and this clearly shows that it would be inadvisable for the Gardens' team to enter a league.

Our most prolific goal-scorer proved to be Mr. MacGregor with seven to his credit, next being Mr. Boyce with five, and Messrs. Farmer and Slinger obtaining three each.

The club was unfortunate in having two members injured, Mr. L. A. Lee receiving an injury to his knee during the first match versus St. Luke's, which necessitated his absence for the whole season. Mr. Bates severely sprained his ankle in a keen tackle while playing against Wisley students and also had to retire. By these adversities, and the loss of the Captain, Mr. Farmer (due to his acceptance of an appointment), the team was considerably weakened, but the keenness of the players never lacked.

At a general football meeting held on November 23rd, Mr. Arnold was elected to fill the vacant Captaincy. At the same meeting Mr. Edwards vacated the Vice-Captaincy and Mr. Hewitson was elected. Mr. Arnold had previously undertaken the secretarial duties for Mr. Lee on the Committee's recommendation.

An enjoyable trip was made to the Herts. Agricultural Institute, St. Albans, and after beating the Students' team 3-1 a refreshing repast was taken in the Dining Room. The return match was played in Old Deer Park and the Students reversed the result by beating the Gardens 2-0.

Another keen match was played when we visited Wisley, which resulted in a wip of three goals to nil. An injury to Mr. Bates unfortunately marred the game, which otherwise was most enjoyable. The team was entertained to tea by the members of the opposing team, when it was suggested that the match should be made an annual fixture.

Four matches were played against Hyde Park, the Gardens winning the first three and losing the last. During the first half of the last match, Mr. Hewitson strained a muscle, but pluckily continued at outside-right; thus the defence was considerably weakened.

The last match of the season against Kew Association proved very thrilling; Kew put on four goals in the opening 15 minutes but the Gardens retaliated and changed over with the score standing 4-2. The "never-say-die" spirit of the team prevailed, and Kew were penned in their own half for the rest of the game and eventually the Gardens won 5-4. This was a fitting conclusion for the season.

The Committee's thanks are due to those players who, at personal inconvenience, turned out for the club and in consequence a full team being fielded on every occasion; also to Mr. Pateman who ably refereed the home matches.

T. A. ARNOLD,
Hon. Sec.



ROYAL BOTANIC GARDENS, KEW, FOOTBALL CLUB.

Season 1928-29.

A. Wilson, E. Hewitson, H. C. Hildyard, T. Lomas, T. A. Arnold, C. W. Rudd, G. A. Davis,
H. H. Jarman, P. E. Boyce, C. McGregor, L. A. Lee, S. A. Pearce,
C. Bate.



ROYAL BOTANIC GARDENS, KEW, SWIMMING CLUB.

Season 1929.

E. Hewitson, B. J. J. Moran, W. Porter, H. C. Hildyard, J. Hayder, A. S. Wilson,
C. W. Rudd, C. Bate, A. J. Brown, G. Carr, P. E. Boyce, G. A. Davis

THE RUNNING CLUB.

THE final run of the 1928-29 season was decided at Wisley on April 20th, 1929, against the Students of the Royal Horticultural Society's Gardens. This was thoroughly enjoyed by all, and being decided in the open country, spectators had every opportunity of gathering at points of vantage. In particular, much amusement was forthcoming at a point where competitors had to negotiate a stream where the water was waist-deep. One enthusiastic eye-witness from Kew, who had been awaiting developments at this point, was so overcome by his mirth that he was unable to take the photographs he had intended. The first to arrive at the winning post (a Kew man) arrived with spoils representative of the British Flora he had gathered en route. Although the run was an easy victory for Kew, the sporting spirit shown by our opponents was of a high standard and deserving of much praise. Kew won by having 1st, 2nd, 3rd, 5th, 6th and 8th placings, a total of 25 points, while Wisley secured the remaining positions, with a total of 61 points.

After being entertained to tea by our opponents, Dr. F. J. Chittenden, the Director of the Gardens, personally conducted us round, showing us much of interest that we should otherwise have overlooked. The day was brought to a pleasant close with an alfresco sing-song in the Hall at Ripley.

The 1929-30 season commenced well by the Arboretum and Temperate House Staff sending out a sporting challenge against the Rest of the Gardens. This was accepted and on October 19th, 1929, the teams met at The Dysart Arms Hotel, Petersham, from which point a three miles' run was made over a course through Richmond Park. Messrs. W. Porter, A. Brown, C. Hildyard and C. Rudd kept well together, with the other competitors not far behind, but after covering half the distance, Porter rapidly increased his lead and was an easy winner, finishing the full course in 14 mins. The winning team, the Arboretum and Temperate House Staff (the challengers) were represented by Messrs. W. Porter, A. Brown, C. Rudd, J. Parsons, G. Davis and H. Jarman, and their time aggregate being 92 mins. 17 secs. The Rest, who made a determined effort, were Messrs. C. Hildyard, T. Jackson, B. Moran, A. Wilson, J. Smith and T. Arnold, their total time being 101mins. 3 secs. Messrs. A. Edwards and A. Findlay-Gunn carried out the duties of time-keeper and judges.

In spite of the absence of many of our most prominent representatives, the fixture versus The Aldenham House Gardens Staff at Aldenham on November 30th, 1929, was again an enjoyable event. The course, which was an all-road one, was decided in beautiful country surroundings and covered 5 miles. The Kew Club here met its first reverse as Aldenham were the victors by 16 points. They were represented by Messrs. Delf, Bowers, Baker, Squires, Goodship and Campbell, while Kew's team was composed of Messrs. W. Porter, A. Brown, C. Hildyard, J. Parsons, B. Moran and

A. Bond. Mr. C. P. Raffill accompanied the team on this interesting outing, and following an enjoyable tea, voiced the thanks of the Kew representatives for such a successful venture.

The most prominent member of the Club during the past year has been Mr. W. Porter, whose form has been consistently good throughout. In addition to being the leading representative in the matches with other prominent Clubs, he has competed in the various fixtures of the famous "Finchley Harriers" of which he is a member. The following is a list of his successes to date:—

Holder of the 10 miles Cross Country Championship.

" " " 4 " Track Championship.

" " " 1 " " "

Second in the $\frac{1}{2}$ -mile Track Championship.

Winner of the 5 miles Cross Country Race.

" " " 7 " " " "

" " " 7 " Road Race.

Surely a record of which to be proud!

J. SMITH,

Hon. Sec., 1929.

THE SWIMMING CLUB, 1929.

THE ANNUAL GENERAL MEETING was held on 10th April, 1929, when the following members were elected to hold office for the season: Mr. H. C. Hildyard (Hon. Secretary), Mr. E. Hewitson (Captain), Mr. B. J. J. Moran (Vice-Captain), Mr. G. E. Carr and Mr. A. J. Brown (Committee members).

The 1929 season may be confidently said to be an outstanding one for many years. This must be attributed not only to the very hot and dry summer, but to the enthusiasm for swimming which prevailed throughout the year.

Many pleasant evenings were spent at the Richmond Swimming Baths, where continual practice improved the prowess of the swimmers and enabled some non-swimmers to become fairly proficient. The record attendance was 22 members, and the average was 9, practice night being on Friday.

Swimming in the Thames became a spontaneous occurrence once the first dip had been experienced, and most evenings would see about eight heads bobbing out of the river, the weather continuing to remain ideal for bathing purposes.

The Annual Mile Championship took place on Friday, 26th July, 1929. The approximate distance was $1\frac{1}{4}$ miles and the course was from the other side of Isleworth Gate to Kew Bridge. Messrs. C. P. Raffill and A. Edwards officiated as judges, and Mr. J. Mingay as starter and time-keeper. 14 entries were received, but Messrs. Holloway and Mayne were unable to start.

Place of Origin.	Position.	Name.	Time.	
Lancashire	1st	H. C. Hildyard.	16 mins.	45 secs.
Canada.	2nd	G. E. CARR.	18 "	4 "
Ireland.	3rd	B. J. J. MORAN.	19 "	5 "
Surrey.	4th.	F. J. HAYDER.	19 "	6 "
Lancashire.	5th.	E. HEWITSON.	19 "	30 "
Italy.	6th.	VIALE, Secondo.	19 "	31 "
South Africa.	7th.	G. A. DAVIS.	19 "	32 "
Germany.	8th.	W. KORN.	20 "	
Middlesex.	9th.	G. L. HOARE.	20 "	30 "
Yorkshire.	10th.	A. J. BROWN.	22 "	
Cambridge.	11th.	W. PORTER.	23 "	
Sweden.	—	G. A. T. BILLSTROM, retired about a ½-mile from finishing point owing to a severe attack of cramp.		

Owing to the number of swimmers participating in the race, two motor-boats from the Thames Conservancy Board brought the swimmers, officials and boats to a raft which had been ordered and was eventually placed in mid-stream near Isleworth Gate. When all the competitors had assembled on the raft, their weight and the strong current set the lot swaying at dangerous angles; the raft righted itself the first time after throwing one or two swimmers off, but the second time it capsized and threw the lot off; many went under the raft as it righted itself and there was general confusion. The swimmers tried to form a line in the water under the starter's directions, but were still in a pack when the word "Go" was cried. This was inevitable, since the current was carrying them ahead, the difficulty being in striking sideways.

The whole incident was a matter of a few seconds, and the starter's quick decision came as a relief to the tense situation. Hildyard immediately forged ahead, followed by Carr, positions which they kept with ease to the end.

Jack Hayder, after being submerged and hit by the raft, regained a motor-boat, thinking the start would be made all over again. He had to plunge well after the others had gone, notwithstanding which, though the youngest swimmer, (16 years old) he made a splendid effort and slowly but surely overhauled the others, keeping well to the left side of the stream, arriving simultaneously with Moran. Messrs. Brown and Porter did really well considering their lack of practice; it was grit and will power which helped them to finish the course.

The Flannel Dance which followed at the Kew Pavilion proved to be a most enjoyable and successful one. Mrs. Chipp kindly presented the prizes, the winner receiving the Silver Challenge Cup for the second time in succession. There were four prizes, money being given in each case, and objects were bought to suit individual tastes. The Assistant Director regretted his inability to be present at the race.

It was later arranged to swim a Half-Mile Handicap in the slack water of the river. The course was from Brentford Ferry Gate to Isleworth Gate.

Officials :—Messrs. H. H. Jarman and C. Coates. Handicapper : Mr. Harry E. Ruck. Charge of Boats and trainer : Mr. C. Preston.

RESULT.

Position.	Name.	Handicap Time.		Actual Time.		Allowance.
1st	HILDYARD.	15 mins.	15 secs.	11 mins.	45 secs.	Scratch
2nd	BROWN	15 "	40 "	15 "	10 "	3 mins.
3rd.	HAYDER.	15 "	50 "	13 "	20 "	1 min.
4th.	KORN.	16 "	15 "	14 "	45 "	2 mins.
5th.	CARR.	16 "	18 "	13 "	18 "	$\frac{1}{2}$ min.
6th.	HOARE.	16 "	30 "	15 "	—	2 mins.
7th.	MORAN.	16 "	50 "	14 "	20 "	1 min.
8th.	PORTER.	17 "	10 "	17 "	10 "	$3\frac{1}{2}$ mins.

Members continued swimming throughout the winter at Hammer-smith Swimming Baths (Lime Grove), many taking winter season tickets, thus fulfilling the prophecies of our keenly devoted secretary, Mr. C. Hildyard, to whom most of the season's success has been due.

B. J. J. MORAN.

3rd Feb. 1930.



THE LECTURES. 1928-29.

Physics and Chemistry. Lecturer, Dr. P. Haas. 25 Lectures. Maximum marks, 100. Highest aggregates: W. Porter, 93; J. H. Turner, 90; R. H. Mason, 88.

Plant Pathology. (FUNGI). Lecturer, Mr. A. D. Cotton, F.L.S. 25 Lectures. Maximum marks, 250. Highest aggregates: L. B. Creasey, 218; R. Findlay, 209; L. P. Lee, 208.

Plant Pathology. (INSECT PESTS). Lecturer, Dr. J. W. Munro. 10 Lectures. Maximum marks, 100. Highest aggregates: G. Catt, 81; G. A. T. Billstrom, 78; G. W. Page, 77.

Forestry and Arboriculture. Lecturer, Mr. W. Dallimore. 12 Lectures. Maximum marks, 100. Highest aggregates: L. B. Creasey, 98; W. Porter, 95; J. H. Turner, 93.

Soils and Manures. Lecturer, Dr. Richardson. 10 Lectures. Maximum marks, 100. Highest aggregates: L. B. Creasey, 96; G. A. Davis, 93; L. P. Lee, 86.

Advanced Systematic Botany. Lecturer, Mr. C. H. Wright, A.L.S. 25 Lectures. Maximum marks, 250. Highest aggregates: G. A. Davis, 209; L. B. Creasey, 207; G. C. Stedman, 206.

Geology and Soils. Lecturer, Dr. H. H. Thomas. 10 Lectures. Maximum marks, 100. Highest aggregates: C. Bate, 90; J. H. Turner, 90; T. A. Arnold, 85; G. E. Carr, 85; E. Hewitson, 85; S. A. Pearce, 85; W. Korn, 85; A. S. Wilson, 85.

General Botany. Lecturer, Mr. T. A. Sprague, B. Sc., F.L.S. 36 Lectures. Maximum marks, 300. Highest aggregates: W. Porter, 294; J. H. Turner, 292½; S. A. Pearce, 277½.

Economic Botany. Lecturer, Mr. W. Dallimore. 20 Lectures. and Demonstrations. Maximum marks, 150. Highest aggregates: W. S. Tannock, 142; L. P. Lee, 142; G. A. Davis, 139; G. W. Page, 137.

Systematic Botany and Ecology. Lecturer, Dr. W. B. Turrill, M.Sc., F.L.S. 12 Lectures. Maximum marks, 100. Highest aggregates: J. H. Turner, 100; J. A. Mann, 98; W. Porter, 98; G. Billstrom, 98.

THE PROFESSOR'S BOTANY CLASS.

-
- " This lesson you will take with me
Is by the learned called Botany,
And leads us to the open air
Disclosing wonders everywhere.
- " Wherever Flora's praise is sung
Then use the old, old Latin tongue
For names of every plant and tree,
A LINGUA FRANCA as you see.
- " This Daisy then, is simply BELLIS,
And to distinguish it PERENNIS.
This is the common PRIMULA,
And this—ah ! yes—POLYGALA.
- " And this," he mused, " Campanulate,
With all its florets ligulate,
Corolla gamopetalus.
- " A lovely specimen is this
TARAXACUM DENS-LEONIS."
- Gently he laid the blossom down
Johnson minor, his eye on.
- " Please sir, when it grows upon our lawn,
My Dad says its D-D-Dandelion."

F. GAMMON, 1929.

KEW NOTES AND GLEANINGS.

THE total number of visitors to the Royal Botanic Gardens, Kew during the year 1929 was 1,169,900, an increase of 42,897 on the attendances of the previous year.

The greatest monthly attendance was during August when 237,466 visitors were registered by the turnstiles; the highest Sunday attendance, 31,439 (May 19th) and the greatest single day record 54,730 (May 20th). The lowest monthly attendance was January, with 7,781 visitors; the lowest Sunday figures, 503 (January 6th) and the smallest week-day attendance was 8 (January 29th). Visitors on Sundays aggregated 468,905, and on week-days, 700,995.

On August 5th, the penny charge for admission on days other than Students Days (Tuesdays and Fridays) was removed and admission is now free. Charges are still made for admission on Students Days and for bath chairs, perambulators and photographic and sketching apparatus at all times.

65,265 persons entered the Gardens on Students Days during the course of the year; 1,430 bath chairs were admitted, 7,873 perambulators passed through the entrances (in addition to those admitted by season tickets) and 16,731 tickets were issued in respect of cameras and sketching apparatus.

Upwards of 15,000 school children were admitted in parties accompanied by teachers, and the educational interest in the Establishment is still increasingly recognised by educational authorities in and around London.

The following are the details of monthly attendances throughout the year :—

1929.						
January	-	-	-	-	-	7,781
February	-	-	-	-	-	8,465
March	-	-	-	-	-	81,991
April	-	-	-	-	-	89,532
May	-	-	-	-	-	196,767
June	-	-	-	-	-	148,463
July	-	-	-	-	-	117,422
August	-	-	-	-	-	237,466
September	-	-	-	-	-	184,747
October	-	-	-	-	-	52,852
November	-	-	-	-	-	27,578
December	-	-	-	-	-	16,836
Total	-	-				1,169,900

RETIREMENT of MR. W. J. BEAN, I.S.O., V.M.H. Mr. W. J. Bean retired from the post of Curator of the Gardens on May 20th, 1929, after 46 years' service in the Gardens. Entering Kew from the famous Belvoir Castle Gardens, as a Student Gardener on the 2nd April, 1883, he served under four Directors, Sir Joseph Hooker, Sir W. T. Thiselton Dyer, Sir David Prain and Dr. Hill. After a period spent as a Student Gardener, he served for a time as sub-foreman of the Palm House and T. Range respectively, subsequently going to the Temperate House as Foreman. After spending five years in that Department he was chosen by Sir W. T. Thiselton Dyer to succeed Mr. W. Truelove as Foreman of the Arboretum, commencing his duties in April, 1892. Previous to his actual appointment to the Arboretum, however, he had been given the task of making the present Bamboo Garden, from what was a rubbish hole, during the winter of 1891-92. His appointment to the Arboretum coincided with the beginning of the re-organisation of the whole of the Arboretum, which was one of the numerous great works achieved during the period of Sir W. T. Thiselton Dyer's regime as Director. Only those who were actually engaged in the work can form an idea of the changes and general improvements brought about between 1892 and Sir William's retirement, and the enormous amount of work involved.

Large numbers of common trees were removed to make room for collection trees, better cultural methods were adopted, vistas were opened out, new paths made, lawns levelled, new ground taken in from the Queen's Cottage ground and from near the Palace; the Rose Garden near the Pagoda was formed, the Lily Ponds in the Arboretum were made, the Lake enlarged, many dirty masses of Laurels and other shrubs removed to make place for better shrubs; the decorative side of tree and shrub life was brought to the front; an improved method of tree and shrub propagation and nursery management was introduced; the present system of tree pruning was evolved and much other work accomplished.

About 1898 Mr. Bean was promoted to the position of Assistant Curator for the Arboretum, and a year or two later to the position of Assistant Curator of the Gardens, his appointment as Curator dating from 1922.

Apart from Mr. Bean's work in the Gardens, he has accomplished a great deal with the pen. For many years he was a very active correspondent of the leading horticultural journals. At the retirement of Sir W. T. Thiselton Dyer he was persuaded to write a book on the Royal Gardens, which was published by Messrs. Cassell and Co. His standard work, "Trees and Shrubs Hardy in the British Isles" is now too well known to need special attention being directed to its value, whilst the two subsequent books on Ornamental Shrubs and Ornamental Trees have also been well received. Mr. Bean has done good work on the Floral Committee of the R.H.S. He has been the recipient of numerous decorations, including the Imperial Service Order, Victoria Medal of Honour and the Veitchian Memorial Medal.

On retirement, Mr. Bean was presented with an armchair and a silver cigar box, to which subscriptions were made by the whole of the Kew staff.

MR. T. W. TAYLOR. Kewites will have learnt with much pleasure of the appointment, in succession to Mr. W. J. Bean, of Mr. T. W. Taylor, as Curator of the Royal Botanic Gardens, Kew, with effect as and from May 21st, 1929. The following notes, which are reprinted from the "Gardener's Chronicle" of May 18th, 1929, will be read with interest.

"A Gloucester man by birth, Mr. T. W. Taylor commenced his gardening career under his father at the Manor House, Ham, Surrey. At the end of two years he left to go as improver in the gardens at Offchurch Bury, Leamington, where he gained further experience both under glass and outside. His next move was to Barcote, Faringdon, a place which at that time was renowned for its collection of Orchids and stove and greenhouse plants. Leaving Barcote at the end of two years, he spent a short period in the Chelsea nursery of Messrs. James Veitch and Sons, and from there he obtained a position as first journeyman at Heythrop Park, Chipping Norton. After serving two years in the plant houses, he was promoted to fruit foreman, a position in which he had entire charge of a large range

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MR. T W. TAYLOR

of fruit houses, as well as the hardy fruits. He remained at Heythrop for four years, when, anxious to gain further experience, he turned his attention to public gardening, and entered the Royal Botanic Gardens, Kew, in May, 1902. After serving one year as a Student-gardener in the Tropical Department, he was promoted to the position of sub-foreman of the Temperate House pits, but in less than a year he was back in the Tropical Department as sub-foreman of the propagating section. In May, 1906, he was promoted to foreman of the Temperate House, a position he held until September, 1914, when he was transferred to the entire charge of the Tropical Department. In 1922 the foremen at Kew were raised to the status of Assistant Curators. Last year, Mr. Taylor made an extensive tour in Ceylon, Malaya, and Java, for the purpose of studying tropical vegetation growing under natural conditions, and to visit the Botanic Gardens in those countries."

(We are indebted to Mr. C. H. Curtis for permission to reproduce the portrait of the new Curator as well as that of Mr. J. Coutts which forms the frontispiece to this issue.—Ed.)

MR. C. H. WRIGHT. On the 30th August, the eve of his retirement, after 45 years at the Herbarium, Mr. C. H. Wright, A.L.S., and his family were entertained at a farewell tea on the tennis courts in the Gardens.

The Director, after delivering a sympathetic speech in which he expressed the regret felt by all at the severance of a connection of such long standing, made a presentation to Mr. Wright on behalf of the Staff, which consisted of an ornamental oak knee-hole writing-table and chair and a leather bound book containing the signatures of all the contributors, prefaced by an illuminated address.

In returning thanks, Mr. Wright was happily and humorously reminiscent of some of his experiences during the long term of his service.

In spite of the unavoidable absence of some of the participants in the gifts, about 70 ladies and gentlemen were present to wish Mr. and Mrs. Wright and their three daughters many years of health and happiness in their new home at Seaton in South Devon.

ON Sunday, February 9th, 1930, during a sermon preached in Kew Church on behalf of the Society for the Propagation of the Gospel, the preacher, who had been resident in the West Indies for many years, paid a glowing tribute to the work of Kew and Kew-trained men in tropical countries. He stated that much of the prosperity that had attended the West Indies through a long period of years had been largely due to the influence of Kew and the work of Kew men. He specially mentioned the work of Mr. Joseph Jones, O.B.E., of Dominica, saying how he had formed a Botanic Garden there which was regarded as one of the finest in the Tropics; he had also been instrumental in building up the Citrus industry and in introducing improved methods of cultivation and selection which had been of very great economic value to the Island.

THE WAR MEMORIAL. Certain members of the Uniform Section of the Gardens' Staff during the past two or three years have voluntarily undertaken to clean the handsome mural tablet which constitutes the Guild War Memorial. This action has occasioned many pleasing remarks from other members of the Staff, and also from the general Public, and it is very desirable that our thanks to these officers (themselves ex-soldiers) should be recorded in these pages.

Each Armistice Day, two wreaths of Victory Bay and Flanders Poppies are deposited on the Memorial, where they remain for several weeks. The necessary funds to meet the cost of the Flanders Poppies (official "Haig" ones only are used) are raised by subscriptions from among all ranks of the Gardens' Staff, but any other members of the Guild who would like to participate in this annual recognition of those members of the Guild who gave their All in the Great War, are invited to send donations to the Secretary, at any time prior to November 11th in any year.

VISITORS to Kew during the past year have viewed with admiration the fine statue at the Kew end of the Broad Walk. The statue of "A Sower" executed by the late Sir Hamo Thornycroft, R.A., was cast in bronze by the Royal Academy and presented through the Leighton Fund. It was placed in position on Jan. 23rd, 1929 on a pedestal designed by Sir Edwin Lutyens, R.A. and Mr. A. Drury, R.A.

THE Sundial referred to in the 1929 issue of the Journal has now been completed and is an object of unique interest. Standing in the centre of the medicinal garden adjoining Museum 4, the dial, which is in the form of a Greek Cross, stands on a pillar which was one of the balusters of the old Kew Bridge. The pillar was presented by Mr. George Hubbard, and the unusual dial was specially designed by Professor Boys. It consists of five equal cubes on a trapezium-shaped support, and in order that those interested may be able to tell the time with accuracy and the minimum of trouble, the dial carries on it a statement giving the position of Kew and directions for adding or deducting minutes to and from the time indicated by the dial to obtain true Greenwich time and, when in force, "Summer Time"

WITH the presentation to the Gardens of such a fine statue as "The Sower" is, it was not surprising that a further offer should have been made of what might be called a companion piece.

Visitors to Kew may now see another fine bronze statue, "Out in the Fields," in the centre of the well-known Iris garden, facing the entrance to the northern end of the Rock Garden. "Out in the Fields" is the work of Mr. Arthur G. Atkinson, a native of Kew, now a Richmond resident, and was first exhibited as a plaster model at the Royal Academy in 1890. "In 1897," to quote from the **RICHMOND AND TWICKENHAM TIMES** of January 11th, 1930, "when

cast in bronze, it was exhibited among the works representing 60 years of British art, then held at Earl's Court as part of the celebration of Queen Victoria's jubilee. It was afterwards exhibited at the Liverpool Art Gallery."

Art critics highly praised the work and some of the verdicts are worth recalling. One wrote on its exhibition at the Royal Academy, "Probably the most poetic and beautiful of all the exhibits is 'Out in the Fields.'" The figure of a young peasant resting on his spade, marvellously true and eloquent with the same nobility of sympathy with those who till the soil as the best work of Millet of the "Angelus."

"TRUTH" said at the time, "Mr. Atkinson's field labourer is so obviously the best statue that everybody will pretend not to think so." Other critics wrote:—"A realistic piece of sculpture... as true to the facts of country life as any that with the aid of colour a painter could exhibit." "No artist wanting sympathy with 'the short and simple annals of the poor' could have been so successful."... "With considerable force and with no compromise whatever, there is here portrayed a type of unalloyed rusticity."

"As a piece of realistic work of the strongest character, Mr. Atkinson's 'Out in the Fields' may be described as one of Millet's labourers done in plaster. The pose, the costume, the expression, are all most real."

The work was offered to the Gardens by Mr. A. T. Hare, of St. Margarets, and subsequently the offer was accepted and the site selected.

It is with great pleasure that we record the following distinctions that have been accorded Kew men in the 1930 New Year's Honours List by H.M. the King:—

Mr. Joseph Jones, formerly Curator of the Botanic Gardens, Dominica, B.W.I. and Mr. W. R. Mustoe, Superintendent of Horticultural Operations, Delhi, to be Officers and Mr. J. Aikman, of the Royal Botanic Gardens, Kew, to be a Member of the Most Excellent Order of the British Empire. In connection with the distinction conferred on Mr. Jones we are privileged to reproduce the following letters which were despatched to the former Curator of the Dominica Botanic Gardens, and were published in THE DOMINICA CHRONICLE on January 8th, 1930:—

ADMINISTRATOR'S OFFICE, 2nd January, 1930.

His Honour The Administrator directs the publication for general information of the following letters which have been sent to Mr. Joseph Jones, O.B.E., in connection with the Honour which His Majesty The King has been graciously pleased to confer upon him. M.P. 1/30.

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“Out in the Fields.”

By permission of “The Richmond and Twickenham Times”

Dominica. No. 1/30.

GOVERNMENT HOUSE, DOMINICA. 1st January, 1930.

SIR,—It is with great pleasure that I have the honour to inform you that His Majesty The King has been graciously pleased to confer upon you the Honour of an Officer of the Most Excellent Order of the British Empire (Civil Division) in recognition of your long and highly meritorious service to the Government of this Presidency in the capacity of Agricultural Superintendent and Curator of the Botanic Gardens.

On behalf of myself and that of the Government and the Public of Dominica I desire to convey to you hearty congratulations on the Honour which has been bestowed upon you.

I have the honour to be,

Sir,

Your obedient Servant,

E. C. ELIOT,

Administrator.

Joseph Jones, Esq., O.B.E.

Morne Bruce.

2nd January, 1930.

SIR,—With reference to my letter No. 1/30 of the 1st instant, I am requested by His Excellency The Governor to convey to you his congratulations for the Honour which has been conferred upon you by His Majesty The King.

I have the honour to be,

Sir,

Your obedient Servant,

E. C. ELIOT,

Administrator.

Joseph Jones, Esq., O.B.E.

Morne Bruce.

SPEAKING at a lecture recently at Richmond, Mr. W. Dallimore remarked, "I do not think there is anything more beautiful on a mountain-side than a group of good old Scotch pines." Later in the course of his lecture, he referred to the spoilation of the English countryside in the following remarks. "What we want to keep is old country roads with mossy banks and primroses, which are too fast disappearing. As soon as the motor coach people find these roads they go down them and first of all a tea shanty is erected, followed by a petrol pump. Then along comes the tripper, with no more soul than a red herring, the sort of man who would place a petrol pump on his grandmother's grave." Visitors throughout England and other parts of these Islands, and in particular those from overseas will only too vividly realise the truth in these remarks.

SYON PARK. One of the most famous beauty spots of the lower Thames is the stretch of river between Brentford Ferry and Isleworth, just at the point where the river flows between the Royal Botanic Gardens and the grounds of Syon House. The scene of serenity and charm, which inspired Wilson, Turner and other distinguished artists, was recently threatened by a scheme which roused all classes and creeds to such a state of just indignation that at the moment it gives us no small satisfaction in recording the abandonment of what would doubtless have proved a menace to the well-being of the extensive collections in the Gardens themselves, as well as to the neighbourhood.

The scheme, briefly, formulated by the Rivers Committee of the Middlesex County Council was to seek powers to acquire Syon Park, the property of the Duke of Northumberland, for conversion into a vast sewage disposal works. That opposition was soon forthcoming was very evident, and had the Committee proceeded with their intention, when they would have had to seek Parliamentary sanction, it is a matter of conjecture whether this would have been obtained, so great was the opposition that the project met with from all quarters.

The Duke of Northumberland, writing in the Press, said, "It would be nothing less than a disaster that one of the most beautiful reaches of the Thames should be rendered pestilential by a sewage disposal scheme, which would incidentally deprive Kew of its amenities and of its view across the river, and would entail the destruction of grounds containing some of the finest and rarest trees in England."

It is not an exaggeration to say that the stretch of scenery that would have been affected is the only natural, unspoilt portion of the surrounding district that is left to residents, and is the admiration of visitors from all over the world. It is hardly necessary to add that the project was vigorously opposed by the Director (Dr. A. W. Hill) in his official capacity, and he was warmly supported in his protests by local authorities, the Press, the President of the Royal Academy and others too numerous to mention. The following lines from the pen of the late Keeper of the Wallace Collection are typical of the many, often indignant, paragraphs to which the scheme gave rise:—

A SONG OF SYON.

By the river of New Babylon WE sat down,
 Remembering Syon :
 We hanged our harps upon banks of concrete,
 In face of Kew.
 From the house of the Northumberlands HE looked down,
 A disgruntled Lion ;
 Drooped his tail over flats of sewage,
 And smelled the view.

D.S.M.

The scheme was definitely abandoned by the Rivers Committee of the Middlesex County Council on February 4th, 1930. The public outcry of indignation that had arisen was unmistakable and it had been as fierce nationally as locally.

KEW METEOROLOGICAL NOTES, 1929.

1929.	Rainfall, in Inches.	Temperature.	
		Maximum.	Minimum (on grass).
January... ..	0.96	50°	14°
February... ..	0.39	51°	5.5°
March... ..	0.03	72°	11.5°
April... ..	1.08	74°	18°
May.. ..	1.19	83°	22.5°
June... ..	1.11	82°	29.5°
July... ..	2.89	91°	40°
August... ..	2.19	88.5°	39°
September.	0.21	90°	30°
October... ..	2.82	66°	18°
November... ..	4.81	59°	18°
December... ..	4.03	57°	18°
Total Rainfall	21.71		

The year 1929 will be remembered in particular on account of the period of great frost, which held the whole country and many parts of Europe in its icy grip. A preliminary period was experienced at Kew from January 1st to 19th, but the period most severe was from February 11th to March 20th. During this period frost was almost continuous and the lowest reading on the grass showed 26.5 degrees of frost. The minimum day shade temperature (at 10 a.m.) on February 15th was 21° (Fahr.) to quote but one instance of the severe conditions. Unprecedented scenes within living memory were witnessed on the River Thames, which for days presented an arctic appearance, large masses of ice continually flowing with the tide. As was to be expected, such a prolonged frost was accompanied by a severe drought; the rainfall recorded at Kew from February 10th until April 1st aggregating one-tenth of an inch and, as it will be observed, during the first three months of the year 1.38 inches only were registered.

After such a period of frost the spring-flowering subjects in the garden made a brave display with the approach of the warmer days of April and May, but the rainfall was still all too scanty, little more than an inch falling in each of the months April, May and June. July was ushered in with a period of brilliant, sunny days, and these culminated in a great storm which broke over Kew and the neighbourhood on the evening of July 20th, following a day of torrid heat when 91 degrees was recorded in the shade. Vivid lightning with terrific thunder was accompanied by a downpour of rain.

During the storm 1.60 inches were registered at Kew, though other districts had heavier falls. Little damage was done in the Gardens and the rain was very welcome and helped to revive the parched lawns. August had an average rainfall with copious sunshine, but the 23rd of the month began a further period of drought which continued without relief until September 28th, no rain being recorded during this time.

October ushered in a cool and wet autumn and the last three months of the year produced almost half the annual rainfall. December was marked with gales of great violence, resulting in the loss of a few specimens of trees, though no loss of great importance has to be recorded, with the exception of a fine specimen of the Turkey Oak in the Rhododendron Dell. The lawns, parched by the drought periods, revived rapidly under the influence of the copious rainfall of the closing months of the year.

ALTERATIONS TO THE ROCK GARDEN.

SHORTLY after taking up the appointment of Assistant Curator in charge of the herbaceous grounds and rock garden, I was asked by the Director, Dr. Hill, to consider extending and re-building a portion of the rock garden, viz., that section lying between the Iris garden and herbaceous ground steps, at the inner end of which section there was a wall constructed of almost everything and anything, from old door steps to stone gate-posts, amongst which grows a very fine specimen of *Pinus Strobus* var. *prostrata*, and which Mr. Bean told me is now the only plant in existence.

Having made a careful survey then of the existing rock garden, I thought the extension would give better results if it was excavated as a valley having a northerly aspect, with small subsidiary valleys; in this Dr. Hill agreed and work was commenced during the latest part of October, 1929. The old Lily border and beds of *Ferulas* were done away with and a gorge was cut through the bank between the wall mentioned above and the tall Scots pine which stands just behind, in this way linking up the upper end of the valley with the remainder of the rock garden by means of half-a-dozen or more steps placed in such a way as to harmonise with the remainder of the work. Standing then at the head of these steps and looking towards the Iris garden, the footpath slopes gradually on to the main path, coming out some twenty feet from the Iris garden end. Soil from this new path was excavated and thrown up on the right hand side to form banks. About thirty feet from where we stand, another path of the same width (six feet) was made to connect up with that running under the rose pergola, and to enter same just opposite the side door of the Museum.

There is to be a waterfall and a small stream on the left, having its source amongst the group of young cedars on the knoll and dropping finally into a pool at the edge of the path. On the other side (right hand side), six or eight feet from where we are standing, there is a small subsidiary valley running back behind the Scots pine, in fact, making the apex of the large valley. The floor of this portion is to be constructed as a moraine. Ten or twelve feet further on, on the same side, another valley is formed to meet the main valley, and down which a stream will flow over various cascades and waterfalls to finish by running through below the path and entering the pool mentioned above. These two streams having met as one, then run down the left-hand side of the path by means of small curves, etc., to turn abruptly left before meeting the main path of the old rock garden at an imaginary wash-out of soil and rock, and dropping finally into a pool which drains down a culvert. So much then for the streams.

In considering the best stone to use for the new work, I felt that sandstone would prove more useful, to my mind limestone being far too hard for this locality, for in the summer it is almost unbearable to touch for heat. This, of course, might have been remedied by larger blocks, but I still maintain that sandstone, being much more porous, will retain more moisture and so remain cooler during the summer months, for if the past two summers are anything to go by I think I shall be justified.

Many of the existing specimens of dwarf conifers in the old section still remain, care having been taken to build round them as carefully as possible to ensure their survival; especially that of the *Pinus Strobus*, var. *prostrata*, mentioned earlier, which even now still grows in its old home, the wall having been carefully hidden by slabs of sandstone.

The moraine which was situated just below this specimen is to be shifted to the left hand side of the connecting path, which runs from the new valley to connect up opposite the Museum side door with the path which passes beneath the rose pergola. In this way I hope to have a sunny and shady moraine comprised of sandstone on the new section, as it will be recalled the one mentioned earlier has a northerly aspect and will also tend to have a certain amount of shade given by the surrounding shrubs, and the latter will face almost due south. The old stone taken out (which was oolite, a form of limestone) is to be used again on the right-hand side of the new path. Here it will look better, the banks being not so high and of an easier slope. (A. EDWARDS).

WEDDING BELLS.

-
- Mr. Charles H. Newman to Miss Alice Isabel Isles, at St. Anne's Church, Kew, Surrey. February 23rd, 1929.
- Mr. Reginald F. Williams to Miss Doris M. Bowes, at St. Matthew's Ashford, Middlesex. June 6th, 1929.
- Mr. Francis A. Barham to Miss Marian B. Winn, at St. Anne's Church, Kew, Surrey. June 12th, 1929.
- Mr. Thomas H. Everett to Miss Nellie Brunt, at St. John's Episcopal Church, Pleasantville, New York, U.S.A. June 29th, 1929.
- Mr. Ernest G. Dunk to Miss Elsie M. Cooke, at St. Augustine's Church, Fulham, S.W.6. July 6th, 1929.
- Mr. Kenneth McCready to Miss Eveline E. Palmer, at Watford. August 17th, 1929.
- Mr. Sidney G. Sayer to Miss Rose E. Major, at Christ Church, Broadstairs, Kent. November 16th, 1929.

KEW GARDENS.

Gardens of beauty, of peace and repose,
Home of the lily, the myrtle and rose:
Cradle where nature lulls calmly to rest
Each stem that she chooses with bloom to invest.

There—scenes are enchanting, attracting the eye—
The various plantations that nature can dye;
Where the shaft of the sunbeam alternately breaks,
On domes of crystal and shimmering lakes.

Beautiful gardens, how charming the view
Those flower beds so pretty of every hue,
The countless collections of blossoms and blooms,
Filling the air with such fragrant perfumes.

There's every feature of nature's wild scene,
In this arboretum reflecting the sheen
Of evenings' red sunsets, and bright dewy dawns,
On shadowy tree-tops and green silky lawns.

Gardens of wonder, so peaceful and still,
Where the admirer can wander at will
Through green woods delightful and bright sunny glades,
Where the natural beauty of summer ne'er fades.

The student of nature may gaze in surprise
At sights so connatural that dazzle the eyes;
Blendings fantastic—so ravishing faint—
That poet could ne'er fathom, nor artist e'er paint.

Gardens so lovely, all covered in bloom
 Where Peris may assemble to their Heaven of perfume ;
 Where Dryads and Sylvans forever may roam
 Among species from foreign lands and species of home.

Flowers of varied hues waving their stems,
 Down by the side of the silent-flowing Thames ;
 Warblers chanting the branches among,
 Add to those gardens the charm of song.

Gardens delightful, so bright and serene,
 The keen admiration of king and of queen ;
 The minds in distress or the hearts in despair,
 In your arbours so pleasant find rest from their care.

Gardens entrancing of grandeur fair,
 Gardens enchanting of blossoms so rare ;
 Thanks to the givers and workers so true
 That give to the people—an Eden like you !

J. O'KEEFE.
 By kind permission .

KEWITES AS AUTHORS.

A TEXT-BOOK OF TROPICAL AGRICULTURE by Sir Henry Alford Nicholls, C.M.G., M.D., F.L.S., revised by John Henry Holland, F.L.S., price 15/-. MacMillan and Co. Ltd., St. Martin's Street, W.C.

The publication of this handy volume in its present form will prove of immense assistance to those engaged in the Tropics. The work, which is more than twice the size of the original edition published in 1892, contains so much up-to-date information that Mr. Holland is to be personally congratulated on its production. The first part of the volume deals with the Elements of Agriculture, and lengthy and very descriptive chapters are devoted to soils, plant life, and propagation, manures, rotation of crops, drainage and irrigation, implements and their uses, pruning, budding and grafting. The second section is concerned with detailed descriptions of the cultivation of the more important economic plants of the tropics.

Separate chapters are devoted to coffee, cacao, tea, and sugarcane, while fruits such as the orange, lime, banana, coco-nut, etc., are dealt with very fully in succeeding chapters. Spices are referred to in two other sections, while tobacco cultivation and harvesting methods are graphically described. Drugs, dyes and tans, are each mentioned in their respective sections, and cereals, food and fodder plants have chapters which are not only instructive, but must prove of very great assistance to the novice and the seasoned agriculturist alike.

Rubber and allied products, fibres and oil plants bring the volume to a close. It is profusely illustrated, has a very useful index, with references, and contains an appropriate foreword by the Director of the Royal Botanic Gardens, Kew, Dr. A. W. Hill.

ROCK GARDENS : HOW TO PLAN AND PLANT THEM. By A. Edwards, price 7/6. Ward, Lock and Co., London.

This is a book of three hundred and twenty pages of good type written by a recognised authority on its subject—Mr. Edwards is an Assistant Curator at Kew, and he is in charge of the Rock Garden there—with eight plates in colour and twenty-two in half-tone, and that it is sold at the moderate price of seven shillings and sixpence is a triumph of post-war book production. Mr. Edwards treats the rock garden from its inception ; he gives a descriptive, alphabetical list of plants suitable for cultivation, showing height, colour and habit, soil requirements, propagation, and care through the seasons. He also deals with the wall-garden, paved garden, and water garden, and his directions for making these are clear. The longest and shortest purses are considered. Writing of the rock garden he says : “ The horrible mass of shiny, glazed lumps of brickwork in the cracks of which half-starved ferns and plants struggle for existence is nothing but a disfigurement,” and then he goes on to describe how and of what materials a real rock garden should be constructed ; and by following his directions the owner of the smallest patch of ground that is open to sun and air may enjoy the delights of a form of horticulture that is simple and fascinating. Even more distressing than the fearsome so-called rockery described by Mr. Edwards is an assemblage of the right kind of rock thrown together without thought or knowledge, with every ledge sloping the wrong way, and with the need for full pockets of soil entirely overlooked. With the coming of this book this eyesore should no longer be possible.

THE ROCK GARDEN PRIMER, by Archie Thornton, price \$2.00. De La Mare Publishing Co., Box 100, Times Square Station, New York, U.S.A.

The “ Rock Garden Primer ” by Archie Thornton, an old Kewite, though written to cover American requirements, is full of much sound practical advice, especially for the beginner, for whom the book is intended. There are chapters on sites for the Rock Garden, Rocks, Soils and Construction, along with chapters on the propagation of Rock plants, suitable bulbs for the Rock Garden, conifers, evergreens, flowering shrubs, etc., and a list of easily-grown rock plants at the end. The book is furnished with a good index and a number of blank pages on which to make garden notes or memoranda. It is of 132 pages, containing three-colour plates and many other illustrations, also diagrams drawn by the Author. The “ Rock Garden Primer ” makes very interesting reading and one may gather that the Author is well acquainted with his subject.

WHERE THEY ARE AND WHAT THEY ARE DOING.

MR. W. EVERITT writes from Queenstown, C.P., South Africa.

"I arrived at the above address to find everything almost burnt up. Queenstown is experiencing a severe drought; the last rain of any consequence fell on Xmas Day. The temperature now is 100.5° in the shade. The sea trip was a pleasant one, but became somewhat monotonous by the time East London was reached, on January 12th.

"We called at Teneriffe, Ascension and St. Helena; almost the first white man I saw on the latter Island was Bruinslich. He has got a very interesting position there and was planning a sort of campaign to try and stir up interest in Horticulture. It is a bare, lonesome looking waste, but he assured me that the interest in his work made him forget that.

"On January 6th at 1 p.m., Table Mountain loomed ahead. As we neared it, Cape Town could be seen nestling at the foot of it. There I met Mr. Van Houten; he holds a very responsible position there as Superintendent of all the parks, gardens and nurseries on the peninsula. We spent a very interesting day in his car on a tour round the mountain. The geological formation is wonderful, beds of rock alternate with beds of clay, and plants that will thrive in one place will not exist at as near as 100 yards.

"In Port Elizabeth I met Mr. Long, an old Kewite, who is the Beach Manager there, and at Humewood the residential side owes much to Mr. Long's ingenuity and enthusiasm. He has turned a wild river valley into one of the most beautiful sights the eye could ever fall on. The banks are clothed with Bougainvilleas, Cycads and numerous palms and Cacti, and the bottom he has levelled and made into bowling greens, putting greens, etc. In addition he has water gardens with pools of *Eichornia speciosa* and numerous Nymphæas.

"I was met at Queenstown by the Town Clerk. We drove to the Town Hall and there I had an interview with the Mayor who, by the way, is an old Scotchman. Queenstown is considered one of the best up-country towns, very English and in all ways very modern. There is an excellent library newly built; one wing, complete with books chiefly on horticulture and allied sciences, was given by Sir James Berry. I found there the *Flora Capensis*, *Flowers of South Africa*, *Cape Wild Flowers*, volumes of Nicholson and Thompson's works, copies of the *Botanical Magazine*, the *Index Kewensis*, and the majority of the sets of books that are in the library at Kew, so you can imagine I feel quite at home when there.

"I found the job here even more formidable than I had imagined. The gardens are fine and, in the centre of the town, well planned, but have been somewhat abused since Mr. Holley's death. I am hoping soon to pull things together. There are fine specimens of *Phoenix canariensis*, *Lagerstroemias*, *Oleanders*, *Tecomas*, *Vitex*, *Bignonias* and the like. The rock garden is well furnished

with native Cacti. The nursery is one mile from the gardens, and we supply trees, etc. to the whole of the Union. In addition I have the streets ; all are planted or to be planted with trees and there is a good deal of bedding in the streets. There are 35 natives (Zulus, Kaffirs and Basutos) and 10 native prisoners with a guard (to do "donkey" work). I have also two European foremen. I have an office, attached to the seed shop in the gardens, with a typist-secretary.

"I attended the Council meeting the other night ; they gave me a hearty welcome and the Gardens' committee is formed of very fair thinking men, so I don't think I shall have much to fear from them and I have a free hand.

"We send meteorological observations to Pretoria by cable (in code) every morning. There is a fine set of instruments here. As yet I have not done much botanizing but am hoping to do so soon. Aloes, Agaves, Pelargoniums, Petunias and the like are noxious weeds. *Dierama pendula* reaches a height of five feet at the foot of the mountains."

MR. W. C. IBBETT, N.D.H., is now Instructor to the Wimbledon Education Committee and teaches gardening and nature study at the various elementary schools in the district. In addition to this he has lately founded The Horticultural Correspondence College at New Malden (see advertisement) where he has an expert staff of tutors to assist him. We wish him every success in his venture.

MR. W. A. WARRY has lately undertaken the lay-out of the Royal Guernsey Golf Club's course, with the assistance of a fellow-member. In recognition of his services, a presentation was made to him at the Annual General Meeting of the Club on January 17th, 1930.

MR. A. HUGHES, formerly with Messrs. Wallace and Co. Ltd. of Tunbridge Wells, is now in business on his own account at Sundridge Nurseries, Sutton Green, near Guildford.

OFFICIAL VISIT TO THE HERBARIA AND BOTANICAL INSTITUTIONS OF SOUTH AND EAST AFRICA.

MR. A. D. COTTON, F.L.S., Keeper of the Herbarium and Library, paid a visit to South Africa this summer and attended the meetings of the British Association for the Advancement of Science at Cape Town and Johannesburg. After these meetings were over he visited many institutions in South Africa, and returned to England via Southern Rhodesia, Tanganyika and Kenya.

The object of Mr. Cotton's journey through Africa was not to make collections of rare and interesting plants, as had been done by Mr. Hutchinson, but to visit botanical centres, such as Universities, Museums, Herbaria, Departments of Forestry and Agriculture, and any

other institutions which are in correspondence with Kew, especially with regard to the naming of plant collections and the publication of Floras. In Cape Town there is the University, the Kirstenbosch Garden, the Bolus Herbarium and the South African Museum, all of which are in close touch with Kew. After the Cape Town Meeting, the Botanical Section of the Association, which was anything up to a hundred strong, visited Matjesfontein in order to examine the succulent vegetation of the Karoo. Meetings were then continued at Johannesburg, after which the British Association party broke up, and members joined one or other of nine tours which had been arranged in order to visit various parts of Africa.

Together with many other botanists, Mr. Cotton joined a tour returning by the East Coast route, though a large part of his journey on land was independent of the party. At Durban he spent some time in the Botanic Garden and the Herbarium, and also at Isipingo, with regard to a survey of the marine algæ of the coast of Natal, which he had previously contemplated. A day at Pietermaritzburg was all that could be spared for the University, the Natal Museum, and the Botanical Garden, since several days were necessary at Pretoria, the administrative centre of all the official botanical enterprises connected with the Union of South Africa, and where there were so many botanists to become acquainted with.

In view of the importance and rapid development of Southern Rhodesia, Tanganyika and Kenya, as much time as possible was saved for these countries, especially since the area is so vast, and the flora so interesting, though comparatively little known and explored. Workers are still few, and hence the need for co-ordination and co-operation in work and all the help that Kew can afford. This help may be rendered in various ways, such as in the naming of plants and collections, putting workers in touch with useful literature or supplying extracts from books, or by furnishing names of botanists elsewhere engaged on the same problem. At Bulawayo the Museum, and at Salisbury the Department of Forestry with its Herbarium, the Mycological Department, and Experimental Station, all required a visit. In Tanganyika Territory a brief call was paid at the Department of Agriculture at Dar-es-Salaam, whilst the ship was in port, but later after landing at Tanga, several days were spent at Amani where the old German Biological Agricultural Institute is now, after its checkered career, re-established as the East African Agricultural Research Station, a go-ahead concern with research in progress on Mycology, Soil Chemistry, Physiology, Systematic Botany, Plant Breeding, etc.

A day was spent at the coffee-growing centre at Moshi, and on travelling from there into Kenya it was impossible to resist a climb on Mount Kilimanjaro. Mr. Cotton and Professor Hitchcock of Washington were fortunate in being able to ascend the mountain to some 12,000 feet, where general vegetation ceases, and to see on the way something of the beautiful vegetation of Heaths and Composites and the wonderful giant Lobelias and Senecios. From

thence, they travelled via Taveta and Voi to Nairobi, and had a week in Kenya visiting the principal botanical centres and seeing the research on hand, especially in connection with systematic botany, Mycology and plant breeding.

It is hardly necessary to remind Kewites of the value of such a tour to a Kew official on the one hand and, on the other, to botanists and various agricultural and forestry officers working in institutions abroad. Old friends are seen in their overseas surroundings and personal contacts are established with individuals hitherto only known by name. In many cases the staff of colonial departments are found in areas removed from books or named collections of plants, or in complete scientific isolation with no opportunity of discussing their problems with a colleague, and hence lacking sympathy and stimulus.

TRAVELS IN THE ISLAND OF DOMINICA, B.W.I.

ON February 13th, 1922, under the auspices of the Kew Mutual Improvement Society, an interesting lantern lecture was given by Miss E. M. Wakefield, M.A., F.L.S., on "A visit to the West Indies," and was a description of a tour made in 1920 or thereabouts. I well remember her eulogistic references to the beauty of the island of Dominica and her slide, showing an excellent specimen of the Cannon ball tree (*Couroupita guianensis*) is readily recalled to my mind when passing the actual tree in the Botanic Gardens.

A brief guide book description may be useful to the reader and form a suitable preface to the following account of travel in that picturesque island which falls to the lot of the Agricultural Officers stationed there.

"Dominica was discovered by Christopher Columbus on Sunday, 3rd November, 1493. It is situated in latitude 15°30' north, and longitude 61°30' west; is some 30 miles in length and 16 miles in breadth at its widest point and has an area of 291 square miles (120,000 acres), the greater portion of which is covered by virgin forest. The island is of volcanic origin and contains, besides the famous Boiling Lake, many solfataras and thermal springs. The annual rainfall varies from 80 inches on the seaboard to about 300 inches in the uplands of the interior. The temperature varies from 66° by night during the winter months to 92° in the daytime in summer, in and about Roseau, but is considerably lower in the mountains where at least one fall of hail has been recorded. January and February are the coolest months. The population at the end of 1925 was 40,075—males 18,183, females 21,892.

"Lime fruit and lime products, and cacao are the principal products. Copra, ginger and vanilla also are important items of export."

Roseau, the capital and centre of the Island's activities, is situated to the south on the leeward coast. Roads suitable for motor-cars are confined to the vicinity of Roseau and a few miles into the interior. Journeys around the island have to be accomplished on horseback or on foot. The trip I am about to describe takes one mainly through the cultivated districts, with the exception of small areas to the north and south of the island.

From Roseau the route follows the coast in a southerly direction, then to the south-east, east, and north north-west, until the port of Portsmouth is reached, when one completes the journey by motor-boat, a good three hours' coastal sea voyage from thence to Roseau. The journey necessitates six halting stations, but as some of these are a good days' trek apart, it is always advisable to prepare for an absence of ten days to meet unforeseen contingencies such as weather, or the exigencies of one's duties.

Some essentials for such a journey are :—

- (a) A good basket-boy, well qualified to act as one's groom, valet, cook, waiter and forage hunter.
- (b) Strong, sure-footed horse, one used to dangerous roads.
- (c) Enough provisions for the whole trip, chiefly tinned goods and 10 days' supply of corn for the horse.
- (d) Good water-proof clothing and several changes. Sun-glasses and mosquito net are essential.

The programme needs to be somewhat elastic and, where possible, estate owners or managers are advised of one's coming. In all the country police stations, a room is provided for the travelling official ; this is replete with the necessary camper's equipment.

To avoid offence, calls must, if possible, be made on estate owners and managers when passing through their districts. Such calls generally result in an invitation to a meal, or to stay a night. The hospitality of the West Indies is proverbial.

Thus equipped, a start is made between 7 and 8 a.m. Proceeding along the coast to the south for $1\frac{1}{2}$ miles, I make inland towards a ridge of land on the slopes of Morne Anglais, called Belle Vue. From here a view of the Caribbean Sea and Roseau can be seen on one side, and the Martinique Channel on the other, and far below my first day's objective—Grand Bay.

At this point I have mounted from sea level to 1,200 feet and see typically illustrated, the gradual predominance of that aerobic fungus, "withertip" disease of limes (*Gloesporium limetticolum*), from the slightly affected plantations immediately on the coast, where drier atmospheric conditions tend to check the disease, to the dying, defoliated trees of the wetter hinterland, with its night dews providing ideal environmental conditions.

Throughout this valley Cocoa of the Forastero and Calabacillo varieties is grown, sugar canes, vanilla, and some trees of *Coffea liberica*, which flourishes well in Dominica. A few trees of *Coffea arabica* exist to remind the traveller of the days of the French occupation, when the export of Arabian coffee exceeded 1,000,000 lbs. per annum.

The dying lime fields of the "withertip" region (excepting the few patches cultivated by the labourers for vegetable gardens), are for the most part reverting to bush. Here I must add that cultivations during the palmy days of coffee, sugar and later limes were made in all accessible places, the topography of the land rarely permitting of systematic arrangement. The crowns of the ridges and the inaccessible parts still remain in their wild state, but this does not apply to the mountainous region of the interior with its virginal rain forests.

From Belle Vue, descent is made through gorges revealing a wealth of vegetation, especially ferns. Huge *Cyatheas* abound, some having a length of stem between 20 and 30 feet. *Gleichenias* are seen as abundantly as in the Eastern Tropics, resembling by their carpeting capacity our English bracken.

Dominica is rather lacking in flowering plants, its finest endemic species being *Petrea volubilis* which, during the early part of the year, is a mass of violet blossoms and arrests much attention.

Towards the foot of the hill, a native village is passed, and natives are observed making small ropes of fig twine from stems of *Musa textilis* or Manilla Hemp. The plant was introduced for trial at a large neighbouring estate 40 years ago, but it did not obtain the length of stem necessary to ensure its commercial success. It is interesting to note that the natives have perpetuated the plant for their own uses.

Other points of interest are the small gardens of decorative plants around the huts. Bright foliage and flowering plants are the most popular, such as *Crotons*, *Dracænas*, *Hibiscus*, *Impatiens*, etc., hereabouts a look-out is always kept for likely finds.

High up the hill on the right, lies the estate from which the disease of "withertip" was first reported in May, 1922. By September, 1922, the disease was manifest in all parts of the island. Having passed through a large estate where a halt had to be made, it was seen that coconuts had been planted to replace the limes rendered unfruitful by "withertip."

On arrival at the estate house, a roomy dwelling place, a halt was called and lunch partaken of. The basket-boy was directed to proceed to the police-station and prepare for my arrival. A tour of the estate was made in company with the manager and advice given where required. It is most interesting and instructive to visit the works and see the water-power systems, mostly erected by the French in the old slave days. Near by are fine specimens of the West Indian Gru Gru Palm (*Accrocomia sclerocarpa*).

The Geneva Estate, which is my present station, in the old days, as most of the large estates prior to the emancipation, formed the nucleus of the district. Although still providing labour for numbers of the inhabitants of the neighbouring communities, we now find a numerous peasantry occupying their small holdings in the hills, and their needs likewise have to be catered for.

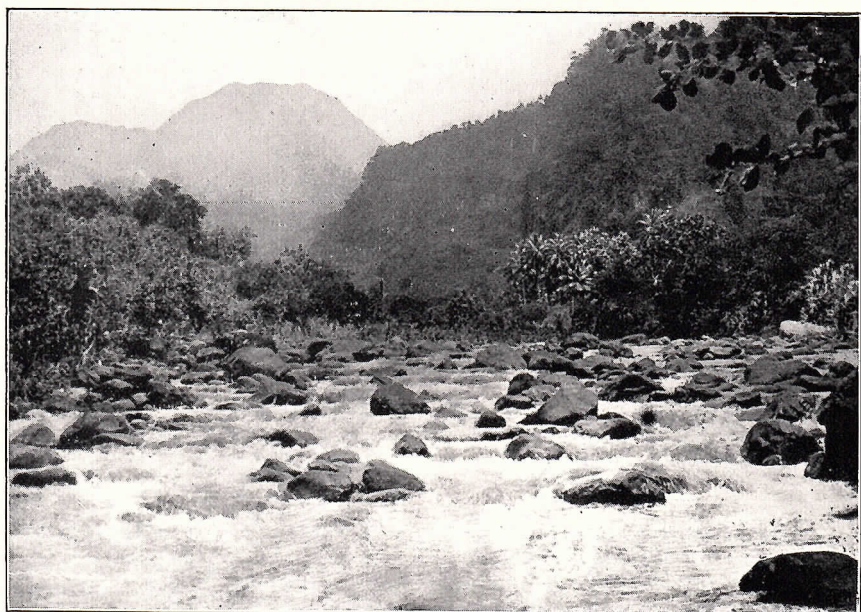
Therefore, I repair to the village, not forgetting a call on the parish priest who generally knows the troubles of his flock, and give what help I can, whether it be advice as to the control of a disease that has appeared, or to inform them of what plants are available for distribution in the Department's Nurseries.

Arriving at the police station I find tea prepared, after which a tub and a change; dinner with the district doctor who resides close by, a few notes to be made, telephone to Roseau, then to sleep on a camp bed. I remember my first night at this station, sleepless owing to the attacks of a minute red bug which awaits its victims on blades of grass, called locally *Bête Rouge*, it burrows under the skin and is particularly partial to strangers. It is, however, easily exterminated by the application of any fatty substances such as soap or even paraffin.

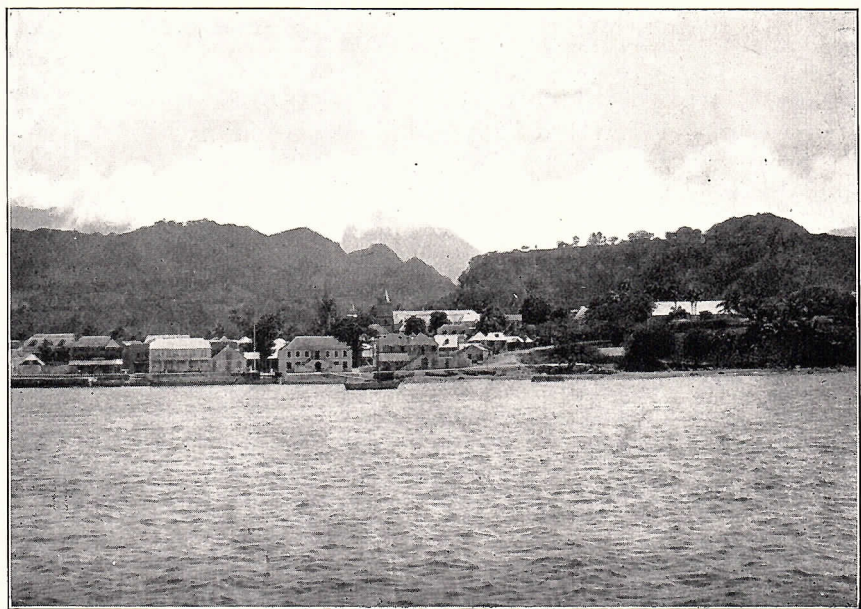
Rising at 6 a.m., preparations are made to start as soon as possible after breakfast. To-day's journey will be northerly along the coast to Pointe Mulatre estate, owned by a retired judge, famed alike for his hospitality and knowledge of the islands, as well as for his severity with Government officials. Now abreast of the Martinique Channel, usually rough, my way takes me in parts along the shore, continually hammered by the Atlantic breakers, forming a contrast to the calm shores of the leeward coast, whence I have come.

Martinique is visible on clear days and Mount Pelee, its famous volcano can be distinctly seen. Some of the inhabitants of this locality make a lucrative business of smuggling, which accounts in part for their backwardness in more legitimate pursuits.

Here I will write a little of the inhabitants. Descendants of slaves, there is a large mingling of white blood, chiefly French, and every shade of colour from black to white is met with. Although English is taught in all the schools, their language is an old French patois, which is not written. Their religion is chiefly Roman Catholic. The art of black magic, or the practice of *Obiah* still persists and is still profoundly feared and believed in. It is a pleasure to work amongst the people of the country, cheerful with the inherited politeness of the French race. Situated as the island is, between the French islands of Martinique and Guadeloupe, smuggling is rife. The most serious and prevalent crime, however, is *prædial larceny*. Ease of living engenders laziness and squatting on Crown lands goes unmolested. Wage rates are low, but the workmen if properly handled, prove good and capable. The gang system of the slave days still survives, tending to inhibit the development of initiative. The cutlass to the native is as the jack-knife



THE ROSEAU RIVER, DOMINICA.



ROSEAU, DOMINICA, FROM THE SEA.

(The above photographs are reproduced by permission of Sir Algernon Aspinall, C.M.G., C.B.E.)

to the "Tommy"; with it he performs all the necessary duties, which are essential for his existence. He is a great imbibor of rum, but his inherited musical talent makes him an interesting personality.

My first call is at a lime estate occupied by a planter, who can always provide one with accurate figures of the economy of estate management.

Sea breezes and the absence of the cooler moisture-laden night winds from the hills has protected his cultivations to a degree against "withertip" and high prices of lime products now provide him with a good annual surplus.

Bay trees grow in profusion, the soil of the windward coast being of a clayey, silty nature and is obviously well suited to their requirements. The Bay (*Pimenta acris*) known locally as Bois d'Inde has three varieties known as Canelle, Citronelle, and Anise. The former being the one possessing on distillation the greatest phenol content. It is, therefore, encouraged and propagated by the peasants in its location in the bush and the others are cut down. Large and small stills are used, the oil of the Bay being purchased locally at about 4/6 per lb.

Leaving the second Estate I am now obliged to ascend two of the largest hills on the route, the second named Paei Busch, has to be taken very leisurely and frequent halts made. At the summit of Paei Busch a distant view can be seen of the Boiling Lake, or at least the poisonous vapour which it emits. This famous natural feature is situated in mid-forest. The journey is arduous and it has in consequence been visited by comparatively few. A party of us, two years ago, made the trip, leaving Roseau at 4.45 a.m., returning at 6 p.m.

After the first four miles, the track leads through virgin rain-forest, where one progresses by clambering from root to root. One journeys upwards to the crest of Morne Nicholls, where a descent of 600 feet is made into the crater (the scene of the eruption of 1880) and a somewhat dangerous jaunt to the lake three quarters of a mile beyond. During this three quarters of a mile, one encounters fumeroles belching up sulphur clouds, streams of boiling water, and quantities of crude sulphur.

The lake covers an area of some 40 square yards. At the time I visited it, it was boiling and disturbed like an enormous cauldron giving off sulphuretted hydrogen gas (H_2S). The poisonous nature of the gas was discovered by the fumes fatally overcoming a member of a party some years ago. When at the lake I threw a stone into its depths and was reproved by the guide, who said that the spirits would cause it to rain, which strangely enough happened within ten minutes. This shower was one of several, and we were thoroughly drenched practically all the way, due partially to being in the region where rainfall is as much as 300 inches per annum! The return journey from Roseau to the Lake is roughly 24 miles.

Resuming my journey, I arrived at the residence of my host, who greets all travellers with a stock joke and a glass of the wine of the "Pays." Residences such as this one are usually equipped with beautifully large concrete baths, with a continual flow of fresh water, generally diverted from the mill race. The old gentleman of Pointe Mulatre, a great friend of Mr. Joseph Jones, has always been keenly interested in any importations of economic trees and welcomes the gift of any new plant sent to him by the department. A result is that he has the best collections in the island of fruiting Mangosteens (*Garcinia Mangostana*). He has, as well, the finest specimen of the West African Butter tree, (*Pentadesma butyracea*), of which he is justly proud. Several years ago he imported a few fallow deer, which for a time were confined in a paddock and liberated later in the woods at the rear of the Estate. There is now a herd estimated at about 300, which provides sport for fortunate visitors. A penalty is imposed if a kill is made, that the erstwhile sportsman stays to see it eaten. Kew men receive a special welcome here.

Pointe Mulatre marks the termination of the telephone system; it is discontinued until we reach Marigot—a gap of several miles—three days' journey away.

Leaving the hospitable judge, a true old West Indian, I journey on. The land gets flatter as we approach the village of La Plaine. Here at the river, women are busily engaged in washing Arrowroot and Tous-les-mois—the latter a product of *Canna edulis*, well suited to the drier soil of the district.

The island boasts of a river for each day of the year, and after the storms, the streams rush down in such torrents that it constitutes a factor to be taken into account when travelling here. The country now is cultivated only in patches, the remainder being secondary bush. Between La Plaine and Rosalie, the scenery is varied and picturesque. The coastline is winding and hilly, and the huts of the peasants resemble the chalets of the Swiss Oberland.

In the sheltered valleys the more tender shade and damp-loving tropical plants, such as Begonias, Selaginellas and ferns find congenial conditions, and epiphytes are abundant. An epiphytic flora, made up of mosses, lichens, and algæ is conspicuous on living leaves in such conditions. A plant naturalised and abundant in damp locations is *Clerodendron fragrans*.

Crossing the wide Rosalie river (which if not in flood can be forded without a wetting) one soon arrives at the Police Station, where a halt is made. The Rosalie estate is famed for the quality of the rum it distils, so a sample is usually offered and accepted.

On the windward coast it is customary to rise at dawn to view the glorious sunrise over the sea, whereas on the leeward side one watches at sunset for that phenomena known as the "emerald drop" which can be seen for the brief space of three seconds at the moment the sun disappears over the horizon. One sees on the instant, just before the after-glow, a wonderful pillar of emerald light which quickly fades away.

Looking inland, when at Rosalie, one sees the vast heavily-wooded mountain range which stretches the whole length of the island, towering into varying peaks of an altitude from three to four thousand feet.

Morne Diablotin, 4,747 feet high, is the highest mountain in the British Lesser Antilles. At Rosalie the track, the only link of land communication on this side with the leeward coast, leads by a perilous route over the mountains to Roseau, a distance of 16 miles. The road winds up to the height of 2,200 feet above sea level, where is situated a large fresh-water lake.

I leave Rosalie for Castle Bruce, a four hours' ride which, if one may specify in this land of natural beauty, is to me the grandest stretch of the journey. Fijord-like coastline and a succession of hills make the road circuitous and difficult, but compensation comes by the continual unfolding of vistas of natural beauty, in which the homes of the peasantry nestle, totally dissimilar to the crowded squalor in village and town.

Heavy surf makes sea-communication a difficult matter and the peasantry transport their produce to Roseau market by head carriers or by panniers on donkey-back. The mixed garden cultivation is the general rule—coconuts, limes, cassava, sugar cane, coffee, bananas, tannias, vanilla and sweet potatoes are interminally mixed in favoured spots where the soil is not yet exhausted. When the soil is spent a fresh venue is chosen, the bush burnt and the land planted, whilst the old garden land is rested and quickly reverts to bush again.

Lunch is eaten at a half-way village where there is a large estate of limes and coconuts. Castle Bruce is a relatively wide valley, having a large acreage of pasture land, where exists practically the only stock farm in the island. With the possible exception of about two herds of good Zebu cattle, the stock generally has greatly deteriorated, as happens in all tropical countries where the importation of good stud animals has nearly ceased. Lamentable specimens are met with, although fodder is plentiful.

For students of animal-nutrition, it may be interesting to record the fact that control of ticks on cattle is achieved by feeding them on lime skins from the mills. A fattening feed, they are relished by the cattle and eaten by them even after several weeks' storage.

For the longest stage of the journey, i.e., from Castle Bruce to Marigot, a fine day must be chosen. Onwards, one encounters very stiff hills, with a silty clay underfoot and should rain fall the road is too slippery and sticky for horses, as they are unable to get a foot hold.

Cultivation is sparse after leaving Castle Bruce, and an hour's ride brings one to the beginning of the Carib Reserve. This reserve is the settlement of the remaining aboriginal people of the island. They pay no taxes, but are under an obligation to keep in repair

the main route through their reserve. The Caribs appoint a chief, who administers the laws of his people. They are distinctive in appearance and character. The pure-blooded Carib is typically Mongolian in colour and feature. The women are singularly attractive with their olive complexions, long jet-black hair and vivacious manners. The men are exceptionally hardy, eking out a scanty livelihood, by fishing, hunting and the manufacture of the native canoes. Carib baskets are a work of art, so beautifully and evenly woven as to render them impermeable. The baskets are prettily dyed with vegetable dyes, the secrets of which have been handed down from their war-like ancestors.

Referring to dyes, wherever Caribs reside, shrubs of "Anatto," (*Bixa Orellana*), the Roneon tree of Dominica, will be found. The dye, obtained from the red pulp which covers the seed, was used formerly to paint their bodies. A call is made on the lately-deposed Carib chief, an old gentleman of eighty-two. Next, a call at the school to sign the visitors' book. The church caretaker, I may mention, had a Chinese father and Carib mother, and insists on procuring a "jelly" coconut for the traveller, which provides a refreshing and "safe" drink.

From there, I visit the present chief and acquaint him with the Government's desire to provide "free" plants. He is, as always, suspicious; he will think it over and perhaps write. The soil of the reserve is poor and little cultivation is noticed. A shy race, the Carib's habitations are generally hidden from the highway. If travelling in the months of June and July, the purplish-white flowers of *Tabebuia leucoxylla* and *T. pentaphylla* will attract attention, bringing to mind the showy effect of our home cherries.

Another small native tree to be noticed for its fine flowering is *Sabinea carinalis*, the Carib wood of Dominica. The fauna of Dominica is small, of note is the Manicout or Opposum; a rodent called the agonti, esteemed a delicacy, and wild pig abound in the interior. An edible frog which is wholly consumed, is the "Crapaud." It is known locally as "Mountain-chicken" and the writer is able to vouch for its high delectability.

Huge land crabs are seen, "Crab-back" being a favourite West Indian dish. Snakes are fairly common, though fortunately none is poisonous; one a constrictor, an average length of 9-12 feet, known by the patois name of "Tete d'Chien," and two small species. Lizards of several species are very numerous, some nearly 2 feet long. They are industrious little fellows. Bird life is limited. Dominica is, however, the sole habitat of the two largest parrots in the world, the great "Sisseron" (*Chrysotis Augusta*) and the slightly smaller "Jack" (*Chrysotis Nichollii*). Humming birds are numerous. Insect life is abundant and the island is the sole habitat among the islands of the huge saw beetle (*Dynastes Hercules*), over six inches long and indigenous to South America.

The long journey to Marigot ended, one is again able to use the telephone and a road suitable for cars extending to Portsmouth. We are now in country where the coconut thrives remarkably well, and two estates in the vicinity produce a considerable amount of Copra. Judicious advice, given some years ago by Mr. Jones (as to the planting of coconuts), enabled these estates to have an alternative crop to rely on when "withertip" first made its appearance.

It will thus be deduced that the Island's industries are in a transitional stage. Since the advent of "Withertip" the Island's export figures of lime products has fallen by half, so to arrest the decline, or restore the output, "Immune" varieties of limes from Florida, Hawaii and Trinidad have been introduced by the Department for experiment and crossing with the Dominica Lime. The work commenced in 1924 and results so far are promising. Further, the extension of lime cultivations in favourable situations is proceeding apace. A Government scheme of "Free Plant Distribution" has resulted in large quantities of cocoa, coffee and nutmegs being sent out from the Department's nurseries, while eight coconut nurseries are established at different points round the Island. Grapefruit cultivation is encouraged, the prospects of success with this crop being quite good. The growing of fresh vegetables for inter-island trade has already commenced. These are grown in the hills around Roseau. Government loans to estates call for frequent visits of inspection by officers of the Department. These visits are necessarily of a thorough nature and the places are often difficult to get at, but the experience gained is valuable.

This locality suffered severely from the hurricane of September, 1928, the centre of the storm passing 20 miles to the north. Coconut stems were snapped, lime trees up-rooted and heavy damage sustained by all crops. At Roseau, where I was at the time, more damage was caused by the huge seas which swept away jetties and long stretches of the coastal road. The wind blew with great violence for about 14 hours. Fortunately we were able to go to the house of a friend who possesses a good hurricane shelter, my own residence being in a very exposed position and of doubtful stability.

Up one of the valleys near Marigot are to be found 130 old trees of the African Oil Palm (*Elaeis guineensis*), the seeds of which are supposed to have been brought over by the slaves. I was interested to find on my last visit to this neighbourhood several trees of *Aleurites triloba*, on a peasant's holding. Enquiries from the owner led me to believe that the parent tree had originally come from the Botanic Garden. He further interested me in describing his methods of extracting the oil from the seed, which he said he used for edible purposes.

From Marigot to Portsmouth, the land is distinctly flatter, especially in the La Soye district. A call is made on a French priest, an enthusiastic gardener, with a great love for Salads, hence

his well-managed, sun-protected French garden is always a lesson of "what can be done." The cabbage Palm (*Oreodoxa oleracea*) is widely spread over Dominica, while Melastomaceous flowering shrubs are common. Nothing is so showy when in flower as a certain species of *Erythrina*, which I believe is *E. senegalensis*.

Becoming acquainted while in the East with the pestiferous propensity of *Lantana camara*, I was somewhat alarmed when first seeing the plant in Dominica. Although frequently met with on waste land, it does not multiply freely. It had been possible to see the French island of Marie Galante since leaving Castle Bruce, now Guadeloupe is discernible to the North-West.

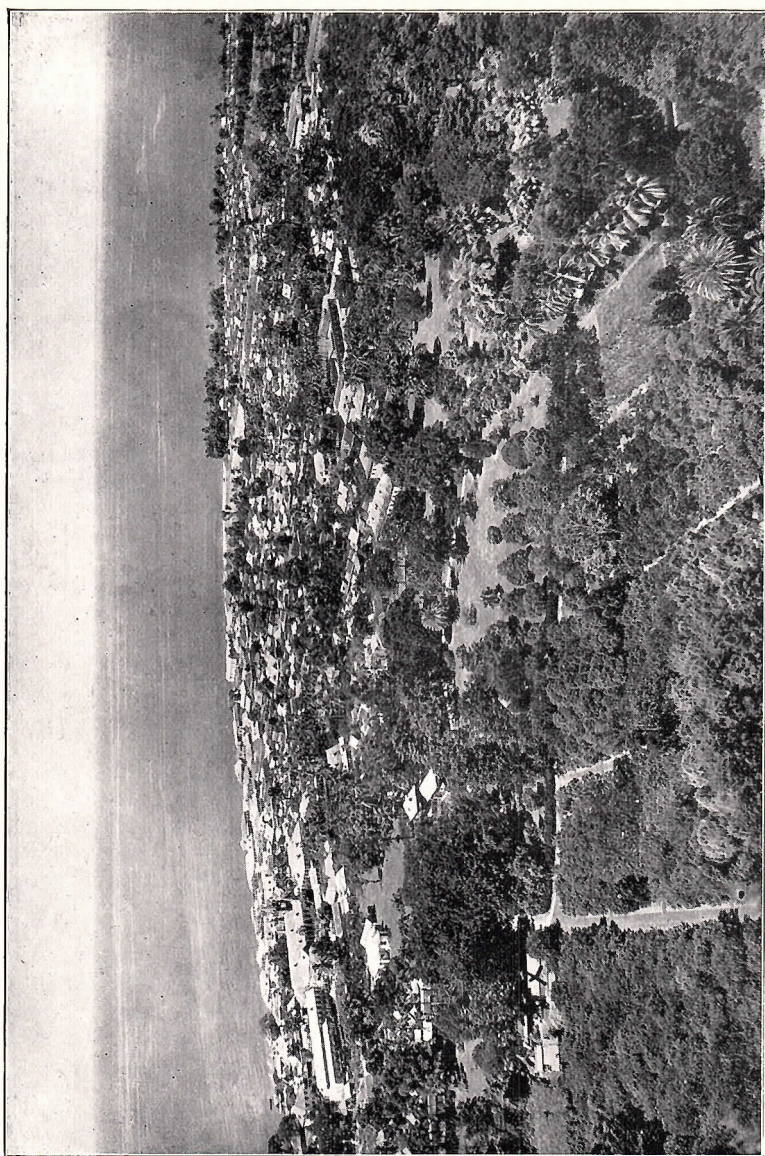
Passing through Hampstead estate, we reach Blenheim, one of the estates owned by Messrs. Rowntree and Co. of York, and so through the hills until we come to Portsmouth, the second town of importance in the Island. Portsmouth possesses a fine natural harbour protected by a peninsula to the north called the Cabrits, it is known as the Gibraltar of the West Indies. Once strongly fortified, the old emplacements can still be traced. Mr. J. Wright once stayed for a week in the old quarters and one night was badly stung by some insect, believed to be a centipede. Lord Nelson's fleet often anchored in the harbour. Yellow fever was once a scourge among the troops stationed here. It has, however, long since been eradicated and stringent quarantine regulations are enforced against possible carriers from infected regions.

Just outside the town are the abandoned saw mills of a company which several years ago started to exploit the island's timber resources. One of the reasons for its failure was the insufficient number of trees of a species within a required radius.

The horse can now be dispensed with and after a night's rest, the boy is directed to take it to Roseau, a two days' journey distant. The journey by motor-launch is not a comfortable one, but it affords a good view of the coast. Nearly half way we reach the "Grand Savannah" (meaning, large field) so called owing to the lava rocks being barely covered with soil. The grass is in a parched condition with a few Xerophytic shrubs. It is many acres in extent and sloping down to the sea, and so can be seen for several miles. On its cliffs the Turk's Head Cactus (*Melocactus communis*) can be easily distinguished.

Further we come to Rodney's Rock, marking the position of Admiral Rodney's encounter with the French under De Grasse. Bat caves are numerous along the coast, the guano deposits being collected and used as manure. One cave I visited, situated in the centre of the island, had a deposit of guano three feet deep!

A view of the mouth of the wide Layou river makes comprehensible the impression of the early discoverers, that the Island was divided, the cliffs flanking the valley on either side, lending support to the supposition. Passing the Hertford estate, a long stretch of Log wood (*Haematoxylon campechianum*) now naturalised in Dominica, which the owner preserved for its value when flowering as a food plant for his bees.



PANORAMIC VIEW OF ROSEAU, DOMINICA, B.W.I.; IN THE FOREGROUND, THE
BOTANIC GARDENS AND EXPERIMENTAL PLOTS.

On arrival at Roseau, a call is made at the offices of the Department which are situated in the Botanic Gardens. I will refrain from attempting at light generalities by a description of this invaluable collection of plants, chiefly economic, and the well-ordered and tasteful arrangement of the Garden.

Suffice it to say, it stands as an achievement of which Mr. Joseph Jones, its designer, or any man, may be proud of, is a life's accomplishment, and fitting evidence of skill, interest, devotion and sacrifice, worthy of those early pioneers sent out by Kew.

While the Botanic Gardens exists as testimony to his skill as a Curator, his duly recorded cultural and manurial experiments with the varied crops grown in the Islands, mark him as a pioneer agriculturist of the first order, and provide proof of the value of a Kew training, with its insistence of the "practical groundwork." My courteous chief, Mr. F. G. Harcourt, took over the department on Mr. Jones' retirement, filling a position rendered difficult by the critical position of the Island's chief industry. Before concluding I have to record the pleasure of meeting the following old Kewites. Mr. Free of the Brooklyn Botanic Gardens who, accompanied by his wife visited the Island during the spring of 1927. Later, Mr. W. Auton, who gave an interesting lecture on the merits of "Adco" manure. Mr. T. R. Hayes who was undergoing a course at the Imperial College in Trinidad.

My only absence from the Island was when I had the privilege of captaining the Island cricket team at Antigua in 1927. Beating Montserrat, we faced Antigua in the final. The result was a draw, owing to the team having to catch the steamer which incidentally took me to Barbadoes to meet my fiancée from England, and a few days later to commence a game which admits of no "draw."

In these fleeting notes of a trip around the coast, I have only partially touched on its interior, with its variations of altitude, rainfall and temperature. These with other factors create conditions which, from an agricultural standpoint, make Dominica an interesting study and experience.

It is in many respects a baffling island. Many confess to its uncanny and mystical influence, especially when sojourning in certain localities.

Three times in its history have staple crops prospered and encroached on its wild vegetation and three times have diseases, or other causes reduced the maximum area under cultivation to a minimum. Forces of nature are nowhere stronger than in the lovely and enchanting island of Dominica.

F. L. SQUIBBS.

Nov. 1929.

A KEWITE IN CENTRAL AMERICA.

SINCE leaving Kew early this year I have received such a flood of letters from Kewites both past and present that the answering of my private correspondence has become something of a problem, and I have had to confine my letters to replying very shortly to the letters of my older friends. I hope, therefore, that these few notes may serve as an answer to the many questions raised by my correspondents, and also be of interest to those others who perhaps wonder what happens "afterwards."

There is, as all Kewites know, with few exceptions, very little really frank information dispensed at Kew; everywhere you come across vague suggestions by persons who you feel should be reliable, and bold statements by the inexperienced which you know are not. The Kewite, therefore, is always in a quandary during the few months prior to the end of his term, unless he comes to Kew with a definite course of action and sticks to it, which few do.

Of late years the Kewite has had the choice of three different avenues of endeavour, A "Government job" in the tropics, Public Park work in England, and private or public work in the United States. These are the three main courses open to the students, each have their advocates, and each naturally have their strong points to which the different types of student react in diverse ways. The advocates of the tropical government job are singularly few among the students; the higher officials are accepted as the "backers" of these jobs and perhaps because of this all these jobs are suspect, even though many of the most successful students are in this class, and such names as Dawe, Macmillan, Milsum, Sands, Williams, and Parsons are bywords in tropical agriculture. The main body of students are, or were, in my time divided between the other two lines, though a certain distrust of Americans pre-disposed many to favour public work in England. Like most Kewites I gave due attention to each opportunity as it occurred and was alternately swayed by first one consideration and then another. I was fortunate in having friends in various parts of the world whose reliable information was naturally of great help, and whose advice was always well thought over when received. I very early decided against public work in England, the remuneration was low and upward progress usually, unless one had influence, regulated by the life of your superiors, or so it seemed to me. There were then the other two courses open to me; opportunities for tropical work were few at that time, and for a long time I dallied with the idea of horticultural work in the United States. I even went so far as to get my passport and visa. Then came an offer through a friend of a position with the United Fruit Company in Honduras. The money was not good judged by tropical standards, but I was attracted by the possibilities, and argued that if horticulturists were scarce in the United States there should be great opportunities with an American Company in Central America. So I found it, and though it is of course yet early to say, I have not regretted it.

The United Fruit Company is a large corporation which practically monopolises the production and distribution of the banana. Among its subsidiary companies are Elders and Fyffes, the well-known English and Continental firm, who import bananas from the Canaries, Jamaica, Honduras, Costa Rica and Columbia. Of late years the company has been looking ahead and, following the general tendency of governments and other large concerns all over the world, organised a Research Department and later a Bureau of Agricultural Experiments. The latter department is under the control of Dr. Wilson Popenoe, well-known even in England as a writer and authority on tropical fruits, while to many Kewites perhaps even better known as the husband of a one-time contemporary, Miss Dorothy Hughes.

Honduras, the greatest banana-producing country in the world, was selected as the headquarters of this new department, one of the chief reasons being that a varied range of climate and soils was obtainable in this division. Work was started on what is now the Lancetilla Experiment Station nearly four years ago. The station is pleasantly situated at the head of a narrow valley running south from the port of Tela, from which it is approximately three miles distant. At the station the temperatures are relatively low, 95° being accepted as the maximum, while night temperatures go much lower, a great point in the tropics as it allows of comfortable sleep. Bananas are not grown at the station to any great extent, the main object being the introduction, trial and distribution of various tropical economics, including fruits, fibres, timbers, cover crops and vegetables. Since particular attention has been paid to fruits, the station can now boast the largest collection in Tropical America. Particularly interesting is the orchard of mangosteens now established and being constantly added to. The decorative side of the station has not been neglected, and though it does not pretend to be a botanic garden the many decorative plants add colour and interest. During my stay in Honduras I had a taste of varying experiences and opportunities for observation denied to many people. For just over two months after my arrival I was at the station settling down and becoming conversant with the collection and general routine work. During this time I found opportunities to wander around the valley, which possesses quite a varied flora. The majority of the trees I was, I am sorry to say, quite unable to recognise or classify, though the valley contains some beautiful flowering trees. One which was particularly noticeable for some weeks because of its bright yellow flowers was called by the natives "Cortez," its correct name, so I was told, is *Tabebuia guayacan*. The valley also contains a giant *Ceiba* sp. as well as Spanish Cedars. The undergrowth and epiphytes were my main interest and I always planned to start a collection. The difficulties attending such a task can hardly be appreciated in England, and I must admit that these difficulties went a long way towards the delaying of this idea. The most interesting of the ground flora belonged to the order *Melastomaceae*, and though the intimate classification of the species was quite beyond me, I recognised several as belonging to the genus *Miconia* and also what I believed to be a *Bertolonia*,

the latter hardly as ornamental as any of the species grown at Kew. A species of *Fuchsia* is also common here and generally throughout Honduras. Of the epiphytes, of course, Orchids interested me the most, and along the ridges of the hills bordering the valley I often saw specimens of what I took to be Cattleyas or Epidendrums in the higher branches of trees, but quite inaccessible. On the lower slopes of the hills I collected *Masdevallia* sp., *Catasetum* sp. and most interesting of all *Chysis bractescens*, this I was able to name as it flowered soon after it was collected. Billbergias and other Bromeliads were common as epiphytes, as were also species of *Cacti*. These too, with Orchids, lichens and various aroids often covered the trees in moist situations.

Subsequent to my stay at the station I spent three days in the "new land areas," some seventy miles from Tela, collecting orchids. To fully understand the term "new land area" and to be able perhaps to visualise what it means, a rough explanation of the system followed in the first planting of bananas is necessary. As preparation for the initial planting, the new areas, usually forest-covered, are cleaned of their undergrowth and the land lined and planted with portions of the rootstock or "heads" as they are termed. These heads are taken usually from plants six to twelve months old, the rhizome is cut through at its junction with the plant, which is then cut down to three or four inches from the ground and the head or stem-base is dug out. These heads often lay about for a considerable time and resemble huge corms, some a foot or more across, when planted. Occasionally, "bits" or pieces of the head containing an eye are used, for filling in gaps "swords" or young plants, four to eight feet high are planted. When the land has been planted up, the trees are felled and after laying a few days are burnt, thus getting rid of most of the vegetation with the exception of the larger trunks, which take but a surprisingly short time to rot away. It will be readily understood that the collection of Orchids from the felled trees is a much easier matter than it would have been had the trees been standing. It was tiring work, however, climbing over fallen trees with a sack growing heavier each moment. There was no lack of material but as my object was to get as representative a collection as possible, I had to leave many which my collector's instinct longed to possess, especially as they were doomed to be burnt. The one consoling thought was that many were of no particular beauty and possessed of inconspicuous flowers. My bag at the end of three days included the following, many of which I could not distinguish specifically: *Cattleya* sp. (nr. *Skinneri*), *Sobralia* sp., *Epidendrum Stamfordianum*, *E. atropurpureum* and several other species. *Stanhopea* sp., *Brassovola* sp., two *Oncidium*s, one very similar to *O. cavendishianum*, *Bulbophyllum pachyrachis*, *Stelis* sp., *Pleurothallis* sp., *Trigonidium* sp., *Nanodes Matthewsii*, *Tricopolia* sp., *Polystachia* sp. Both the *Stanhopea* and *Sobralia* I found growing forty feet from the ground on a bare tree trunk. Another curious point I noticed that most of the Orchids were found on two species of trees. This interested me enough to seek the tree names; one was obviously a *Ceiba*, but I could not determine

the species ; the other was *Sideroxylon tempisque*, a hard timber, called by the natives "tempisque."

Soon after this short relaxation I was sent to the headquarters of the banana research work at La Fragua, a point thirty miles from Tela and conveniently located in the best banana land. Here I stayed for six weeks, becoming familiar with the details of banana growth and production, also the various problems connected with them which the company is seeking to simplify. It was here that the opportunity came for advancement, and within a few days I was on my way to Costa Rica to take over from Mr. Alfred Keys, an old Kewite, the formation of a similar station to that at Lancetilla, in the Costa Rican division of the company. The Costa Rican station will have different problems to contend with, however, as the company's interests are there divided between bananas, cacao and coffee, while balsa, a light-weight timber used for insulating, etc. is also extensively grown. My journey to Costa Rica was full of interest. I was accompanied by an American forestry graduate who was destined to assist me. The first day we rose early and travelled by car, a flange-wheeled truck running on the railway lines, to a point along the coast, where we were picked up by one of the company launches and taken to Castilla, a port eighty miles east of Tela. I cannot describe this journey along the coast as I was miserably sick the whole six hours we were aboard, and after this journey, commend all Kewites to avoid long journeys in small boats. We stayed at Castilla that night and the next morning went aboard the "Atenas" for the first stage of our journey. This trip was uneventful and we landed in Havana two days later, rather relieved and ready to appreciate any of the delights which civilised shore life might offer. We were not disappointed ; Havana is truly a wonderful city. The first day of our stay we visited the Tropical Gardens which are kept up by a brewery firm, and where all visitors are supplied with unlimited quantities of beer. We stayed here only long enough to quench our thirst, then continued our tour of the city suburbs, the Country Club, Casino and Bathing Beach, all first-class and laid out to attract the American visitors. The city is well built and modern, though its narrow streets prohibit appreciation of many of its fine buildings. The newly completed Capitol is an imposing building modelled after the style of the Capitol at Washington. The Prado is the meeting place of the city. It is a wide street with a central promenade, paved with polished stone and lined with trees, I believe of *Ficus nitida*. *Ficus religiosa* is also a common street tree. Cuban women must also be classed as one of the attractions of Havana, surely few other places can boast such a great proportion of beautiful girls. We spent three days in the city and were sorry to get aboard the "Ulua" for our voyage to Cristobal. We were relieved to find some few passengers aboard and we had quite a good time socially before docking three days later. The day after we arrived I paid a visit to the U.S. Plant Introduction Gardens at Summit. On my way out I noted the enormous areas which had been flooded in the building of the canal. Many of the trees which covered the land previously standing up like skeletons out of the shallow water.

The Summit Gardens are a hundred acres in extent and hold a collection of a thousand species of economic and decorative importance. I was shown over the place by Mr. J. E. Higgins, the agronomist in charge, whom some Kewites may recall as a prolific writer on tropical horticultural subjects. Mr. Higgins was also kind enough to drive me over the isthmus to Ancon, Balboa and Panama City. The Canal Zone is, of course, entirely American and the buildings in Ancon and Balboa are typical of that progressive nation wherever they settle. I was privileged to visit and explore the Administration Building at Balboa and the fine hospital in Ancon. Panama City though not in the zone, owes much of its order and cleanliness to American influence.

From Cristobal to Limon, the main port on the east coast of Costa Rica, is but twelve hours. These were spent by my companion and myself in conjecture as to what our future home would be like. It did not take us many days to feel reassured on this point. Costa Rica is a wonderful country, a land of rain, rivers, and a railroad, any reference to Costa Rica would be incomplete without either of these. The first thing a visitor notices is the number of streams and rivers which rush and tumble over rocky beds in their hasty journey to the lower levels. The rain, too, forces itself on the visitors' notice before many days are past; on most days there is a light shower between two and four, but if it suddenly decides to really rain the absolute extremes of protection will rarely keep you dry. As much as three and a half inches have fallen in one day since I have started my records here. The railroad is the next thing that comes under notice, perhaps the first thing if you travel up to San José, the capital, on your first journey, for nobody can fail to be struck with the courage and skill required to instal a rail-road in a country such as Costa Rica. The railroad runs through scenery as beautiful as can be seen anywhere; the train travels along steep hillsides and the traveller looks with delight, not unmixed with envy, on the country that has fallen to the lot of a people almost too lazy and uneducated to take advantage of their birthright. The view from the carriage windows includes the long Reventazon River valley for some 40 miles of its length. The country in the interior is indescribably beautiful after the flatness and luxuriance of the lowlands. The difficulties experienced in keeping this railway open are a contributory cause to the country's backwardness. The torrential rains in the interior cause the rivers to flood and landslides to occur many times in a year, which then blot out the railroad altogether. The seriousness of this cutting off of the only communication from the east coast to the interior cannot be over-estimated. One has to travel on the line, however, to realise what the engineers are up against. The whole thing makes one marvel at the skill and energy shown by the pioneers who put in the rail-road, thirty to forty years ago.

Siquirres, where the Experimental Station is situated, is 38 miles from Limon, and only a few miles from the foot of the famous volcano, Turrialba. The town is largely inhabited by negroes from Jamaica, as is also most of the low country. The small colony of whites, some half-a-dozen families, makes the social life

of the place quite attractive, however, and the facilities for swimming, tennis and riding add to the spare time recreation. As in most small towns in Central America, the streets in Siquirres are unpaved, and the railroad is the main highway.

The Experimental Station as it stands at present is eleven acres in extent, with fine office buildings and propagating sheds, and is situated on an area of land which had been previously planted with coconuts, and before that with bananas. The work of clearing the land had largely been done before I arrived here, but it was several months before I had the land ploughed, drained and in a fit state to commence planting. I have now completed my planting for this year, the wet season having just commenced. It does not take long in this part of the world to make decided changes in the landscape, and though methods are slow and it is hard to make people realise that time counts, the vegetation makes up for this by its amazing rate of growth. I can imagine that a horticulturist who returned to work in a temperate climate would ever after be fretful with impatience at growth rates. The station, therefore, is already taking shape; the pleasure of landscape work is much enhanced by the accelerated growth, and the building up of the station has been a never-ending source of pleasure. Although so young, the station already has a fine collection of Mangoes and Avocados, and a collection of Oil palms, second in importance to the Lancetilla collection in the Americas. Cover crop experiments cover an area of three and a half acres, and the collection of miscellaneous economics and decorative plants is steadily growing by additions from all over the world.

My experience in Costa Rica has not, however, been confined to the lowlands. I have, during the last few months, spent several weeks in the coffee regions of the interior. Costa Rican coffee is well known as being of high grade and commands usually a higher price than the average Arabian type. To stay long in the coffee districts is to yearn for a coffee "finca" of your own. The climate is indeed wonderful, living is fairly cheap and the beautiful scenery and hospitable people more than make up for the disadvantages of living away from civilisation. The Costa Rican coffee is wonderfully free from disease, the only disease of much consequence being the fungus *Cercospora Coffeicola*, which kills out many plants, especially in farms below the three thousand feet level. The cultural methods in the coffee farms are very backward, but the Government are now doing their best by the establishment of a school of Agriculture in San José to bring better methods to the notice of the farmers. This school, though it is not yet finished, is the most promising sign I have noticed in any of the Central American countries. It is well appointed, its classrooms and modern fittings put the lecture rooms at Kew to shame, while the wealth of practical modern books in the library make the recollection of the student's library at Kew seem very mean. With all these facilities one would imagine the Costa Rican youth to be eager to take the opportunities offered. It is not so, however, and though perhaps agricultural education has not yet had time to catch the

fancy of the larger farmers sufficiently to persuade them to send their sons there, results at present must indeed be disappointing to the enthusiast at the head.

The cool, humid coffee regions are also the home of many hundreds of orchids and other epiphytes. Costa Rica is, of course, a comparatively well explored country, but there must be very many plant species at present undiscovered. Kew has, of course, received many Costa Rican orchids through the agency of Mr. Lankaster, an Englishman long resident in the country. They are usually rather difficult to manage under cultivation, this difficulty I fully appreciate now that I have experienced the climate and can realise the impossibility of reproducing the conditions here under glass in England. As in Honduras, I hope to make a collection at Siquirres, of native orchids and decorative plants. I had also planned to start a botanical collection, but this is very difficult in a humid climate and under existing conditions.

This concludes in the main my experiences up to the present. I hope yet to have many more as pleasant to relate to my friends when I again get back to England and Kew.

G. A. CATT. 1929.

THE GROWTH OF HORTICULTURE in the UNITED PROVINCES OF AGRA AND OUDH. A TRIBUTE TO THE SONS OF KEW.

WHEN one considers the elevating influence of horticulture, the great role it has played and still plays in the betterment of our lives, either in the field of economics or in the beautifying of our surroundings, it is not without interest that one surveys the awakening and development in this respect that is taking place in the distant corners of the Empire.

India, with its teeming millions, as distinct in race as they are in religion, has undoubtedly benefitted by the birth of horticulture, this natural science that knows no orthodox feelings, prejudices nor traditions; and though the movement is general, it would be unfair to speak of India as a whole, as one must not forget that this great peninsula is 14 times larger than the United Kingdom, with a population almost eight times greater.

Before actually reviewing the growth of horticulture in this distant land, it would not be out of place to follow the injunction of the Latin poet, "*Palmarum qui meruit ferat*," by openly acknowledging what India owes to those early pioneers, mostly sons of Kew, who have won through against tremendous odds and so successfully taught the people those horticultural precepts that have so largely contributed to the betterment of their surroundings.

For the purpose of these notes the writer, whose long Indian career is now closing, will, in reviewing the subject in the past thirty years, during which he has been intimately associated with it, limit himself to the United Province of Agra and Oudh, which by themselves are almost twice the size of England with a population exceeding 48 millions. What he particularly desires to emphasise is, that this growth is directly attributable to the influence of the Government Gardens of the Provinces.

These Provinces have no doubt been, and still are, the garden of India, as in no other province or presidency has horticulture been more systematically pursued. The great horticultural centres of Saharanpur, Lucknow, Agra, Allahabad and Cawnpore in the plains, with Kumaon and Almora in the hills, have no doubt done far more to foster horticulture than the whole of the rest of India put together.

With the advent of the Reforms that aim at giving a larger share of the administration of the country to the masses, the United Provinces Government has not been long in recognising the intrinsic value of horticulture, and one of the first measures of the Chantamani Ministry was the creation of a horticultural section or circle under the auspices of the Agricultural Department, and entrusted to the care and guidance of an experienced horticulturist. The reason for this departure is not far to seek, indeed it is obvious, for the technics of horticulture are widely different from agricultural pursuits. What horticulture has already achieved in the field of economics by the introductions, acclimatisation and dissemination in India of most of the vegetables and the fruits of the world, forms an important page of history and will remain a monument to the pioneers of the movement.

These horticultural pioneers have taken advantage of the great diversity of climate prevailing, ranging as it does from the torrid zone of the plains through the temperate of the sub-mountain to the frigid of the snow-line districts, and have endeavoured to instil into the population of this extensive tract of country a great desire to secure the best in the wide range of exquisite fruits and vegetables that can be produced.

Too little is really known of the great part the Government gardens of the Provinces have played in the introductions, acclimatisation and distribution of economics, in the furtherance and development of fruit cultivation through the plains of Upper India and adjoining territories and, what is of much more importance, in the creation of a perfectly new industry hardly known and scarcely attempted at the close of the 'nineties. This expansion of horticultural pursuits is undoubtedly very marked and shows a healthy awakening of a desire among the masses to avail themselves of nature's choicest products and to live in healthier and more congenial surroundings.

The privately owned nurseries that have sprung up in and around Saharanpur, Lucknow, Agra, Allahabad and Cawnpore, in plains as well as throughout the Kumaon and Almora hills since the writer

joined the Provinces, testify to the influence of the Government Gardens on the welfare of the people. Where have the thousands and thousands of fruits and ornamental trees and shrubs annually produced and sold in these nurseries gone to? Surely to enrich the whole country, and the demand for this nursery produce still continues. Whereas formerly, the Government Gardens of the Provinces were the sole agents of distribution, now this industry is mostly in the hands of private owners, separately or in partnership, who received their early training in these Government institutions.

What the late Mr. Gollen and Mr. Ridley of Saharanpore and Lucknow respectively, gave, and those who followed them have contributed to the cause, is best known to those who received their professional training under them. The growth of fruit farming throughout the Kumaon and Almora hills, by itself is sufficient testimony to the services rendered by the Kumaon and Chambattia Government Gardens. To the late Mr. N. Gill is directly traceable the impetus given to this industry. With the leasing of the Government orchards of Chambattia, most of the professional trained men, to whom the art of propagation and pruning had been imparted, started on their own, or were employed in other orchards. Thus through them do we now see not only an intelligent cultivation of fruit trees, but also an intensive propagation of stock plants that has led to the formation of regional nurseries which, in their turn, are now growing and distributing fruit trees amongst cultivators.

Is it worth while trying to visualise what the Provinces have indirectly gained by this expansion of fruit cultivation and of nurseries? One has only to see the quantities of boxes of fruits that are daily being handled at railheads and to watch the despatch of plants from the various centres, to realise that besides the direct income accruing to nurseries and orchards, there are many side industries that benefit considerably. The carpenters in the preparation of the thousands of boxes, the card-board industry in the manufacturing of card-board boxes for soft fruits, the basket makers, the transport agencies and the railways, not overlooking the revenue derived by the C.O.D. system, etc. All these are indirect beneficiaries from the same source. It is only when facts like these are brought together and considered that we can realise the many benefits that are conferred on the country and its inhabitants by an industry which thirty years ago was almost unknown.

A great deal has been achieved, yet a great deal remains to be done. It will require the concerted effort of both Government and the growers to remove all the obstacles that prevent fruit growing in the Kumaon and Almora hills from becoming a prosperous industry. The fruit growers by a co-ordinated scheme or grouping of producers for a more even or regular exploitation of the existing markets and by a uniform grading of produce, etc., and Government, by studying the improvement of transport facilities, so that new tracts of country could be ultimately opened up and fresh sources

tapped. The introduction of cheaper modes of transport and the granting of the quarter parcel rate on all railways for the convenience of perishable commodities would not only give a great impetus to all the trades on which the welfare of the country so greatly depends, but would enable the bulk of the fruit production in the various hill orchards to be placed on the great provincial markets, and only thus would the inferior class of fruits also, which at present it does not pay to handle, find a ready market amongst the millions that cannot afford first-class fruits.

The wise step taken by the Government in 1905-06 to restrict the competition between Government gardens and privately owned nurseries was the first recognition of the birth of horticulture as an industry. From that time this nascent industry has made wonderful strides, and the United Provinces Horticultural Directory, compiled by the writer for the information of the Department of Agriculture, records over 250 privately owned concerns, spread through the length and breadth of the Provinces—a striking example of its growth.

For the want of capital, most of these concerns have had very modest beginnings and even now their operations are restricted, but they nevertheless constitute an industrial force which plays a great part in the improvement of social conditions. The argument that most of them are but of small importance must be dismissed. There is evidence that some of them have the pretension of being of Provincial importance; most of them, however, specialise, and their chief endeavour is to cater for local and regional demands and needs. They are the true apostles of horticulture. The mere fact that they came into being and continue to exist demonstrates that the development of the country is proceeding apace. Their further development, therefore, should be watched with interest and encouragement and facilities should be readily extended to the creation of such nurseries and orchards in all districts.

In conclusion, the writer wishes to emphasise that, whatever the cost of the Government Gardens of the Provinces has been during his many years in India, he considers it to have been a golden investment in the development of the resources of the country, an elevating influence beyond estimation on its inhabitants, and the means of creating an industry which, if not exactly flourishing at present, possesses great potentialities for the future which will undoubtedly lead to a general uplift of the masses.

A. E. P. G.

TWENTY-FIVE YEARS IN THE CELESTIAL AND FLOWERY EMPIRE.

A QUARTER of a century, in prospect, to the man of fifty, some time ; to the youth of 25, a life time ; to him who looks back merely an episode, in this case a very pleasant one.

Shanghai, when I went there was practically unknown, I cannot recollect many student gardeners at Kew at that time who had the slightest idea where it was. Even the school geography books described it as being a sea-port on the North side at the mouth of the Yangtze River ; it is actually 13 miles in from the mouth and on the Wangpoo, a tributary of the Yangtze.

When I took over, the parks were a figment, and in the eyes of the inhabitants considerably less than that. There had been a Kew man there for about four years before me. He began paving the way, but then the way had no foundation, and conditions were not at that point when a slight impetus at the beginning starts the ball of progress in motion. At that period the Park's Staff was on an average 25 men, and expenditure less than £3,000 per annum. When I resigned, the Staff consisted of 12 European Assistants, 2 Japanese, 25 Office men and, on an average, 600 workmen daily. Maintenance alone costing about £20,000 per annum.

During my term of office I designed and built four Parks (two of 50 acres each) including a Zoological Section, 4 Playgrounds, 3 Squares, 3 smaller spaces, 2 cemeteries, 25 grounds and gardens attached to Hospitals, Schools and other Municipal buildings ; re-modelled existing areas, including one of 80 acres, designed and assisted in the laying-out of fully 150 private gardens and assisted in the laying-out of two private Golf Courses and two " Dog Racing " grounds. I also designed and laid out the grounds of Gingling College, Nanking, and at the beginning of this year was advisor to the Committee who planned Dr. Sun Yat-Sen's Memorial Park-area of about 9,000 acres including a hill 1,200 feet high. I planted over 30,000 trees on the streets. In connection with street trees, a widely travelled British land proprietor, who is acknowledged as an authority on Arboriculture, stated :—" The roads of Shanghai are second to none in this respect, complete stretches being planted with particular trees found suitable."

Nurseries, seed trial and growing grounds, and experimental sections, in all about 30 acres, were maintained as part of the Parks Department, whilst a number of surplus lots of land belonging to the Municipality, but not immediately required for other purposes, were utilised for growing seedling plants. By the use of these plots a saving in transport was effected and more space in the proper grounds rendered available. The Nurseries were, in as far as book-keeping was concerned, managed as a business concern, but the Profit and Loss account never left my office. The cost of

making and maintaining the gardens attached to Hospitals, etc., was debited direct to the Department concerned, although the work was done by park's men. Therefore, as new gardens were made, the necessary trees and shrubs were drawn from the Nurseries, yielding some years of good profit which, before the accounts for the year were closed, was expended on the purchase of exotic trees and shrubs. Flower beds and borders were planted three, sometimes four, times a year, consequently the amount of bedding plants raised annually ran into many tens of thousands. To effectively meet this demand a considerable area was required for raising seed. Shanghai-raised seed gave superior results, except in the case of semi-alpines like polyanthus. The fifth generation, even of plants which when imported required shading for two summers, produced plants which grew and flowered freely. When in the fifth generation, after very careful selection annually, plants which did not prove amenable were discarded, for a Park's Department has not, nor should have, time to nurse weaklings over an even moderate period. From 1912, trees and shrubs were given free to anyone who desired them; as many as 3,500 have been given away annually. Recently the demand has been small so this practice more or less lapsed.

Greenhouse and herbaceous surplus plants were likewise given to all who applied for them. No plants were sold.

Seeds were purchased annually from America, Britain, France and Germany, but they were of new or improved kinds and were grown in the seed ground for two years before employed for bedding. True and definite-coloured flowers were secured in quantity—not as far as we were concerned—possible from purchased seed. This was largely due, no doubt, to climatic reasons.

Until comparatively recent years there was no sewerage system in the city. Then the revenue derived from the sale of "ordure" (night soil) after all expenses were paid, gave a clear profit of over £15,000 per annum. When a complete sewerage system was established, the loss of this revenue was indicated, unless the residue ("activated sludge") could be disposed of, so demonstration and experimental plots were laid out at the various disposal works. These plots were treated with "activated sludge", others in the way the Chinese farmer fertilizes the soil, others with numerous other "special" and chemical fertilizers; the same crop was grown on each plot to illustrate the value of the various fertilizers, charts on each plot showed the cost and quantity of fertilizer used, likewise the results. So far we were pleased when a farmer offered to remove the sludge. Whilst the farmer can obtain night soil in ample quantities at even a slightly higher cost than it is at present, he will not use "activated sludge," and there is reason in his madness. Given these facilities it was natural that experimental work on a larger scale would follow. Cotton, in four years, by cultivation and seed selection, gave twice the return usually obtained. Soya Bean in the same period $\frac{1}{3}$ increase, Barley and Wheat $\frac{2}{3}$ increase, Rice 100% increase, Green vegetables, Peas and Beans excepted,

an increase of 80%, Maize none, even the coolies knew it would not. Work on vegetables was carried on for 10 years, during which period every known vegetable in America, Europe, Japan and China was cultivated. This experimental phase is past. Such of the plots as are now retained are employed solely as vegetable gardens.

One of the first problems was educating the public to a realisation of the importance of parks and gardens, public and private, "a pleasure to the meanest, etc.,"—I have yet to hear a labourer reciting that with gusto—of great importance (as a health measure only) in over-crowded Shanghai. Space for publicity endeavours was provided freely by the Press. A weekly column on "What to do in the Garden" was run. Occasional notes on interesting plants appeared. I began laying out what eventually was the first park, this provided copy, even to the size of a fish when stocking the pool.

The Horticultural Society was resuscitated and I became Hon. Secretary and Director. I did the work and took care a number of others got the credit; saw that most exhibitors gained a prize. Prize-winners were congratulated by their friends:—"My dear, it is incomprehensible how you accomplished such wonderful results." Wines, cigars and cigarettes were plentiful and cheap, so were ices, sandwiches and coffee; the orchestra invariably good, vocal music sometimes, and when it was discovered that Mrs. A. had won First Prize for Asparagus which had been purchased for a special Dinner, or Mrs. B. had scooped up all the premier awards—for the first time—and she was and had been in England for six months and her house empty, MacGregor's Show was described as good in every way but as a competition in garden produce it was as huge a fraud as himself,—(no one wanted matters otherwise). It was when the "honest to goodness Judge" who counted the peas in the pod and the spots on the apples came on the scene that the Shows first felt a draught. Advertising pays! at least it did in this instance, for there came days when money or votes were required for expansion, it was treated easily for "it was only 'Old Mac' wanting some more mud."

Sons of good farmers were engaged as learners, "lean pidgin boys," their hardest work was three hours a day to be spent studying English and Chinese. Ten of these boys are the Parks' Head Gardeners to-day and at least equal, in their place, to any average Head Gardener in any country and superior to what any gardener from any other country could be in China without at least four years' experience there. A school for Gardeners was inaugurated and carried on for three winters.

In the spring and autumn months, invitations to "come out to tea and have a walk round my garden" became almost a daily habit. For a number of years I spent most of my spare time in this delightful pastime, giving advice and encouragement.

To a young man with initiative there cannot be a more interesting life than to be dumped down in a place like Shanghai was 25 years ago, where everything pertaining to gardening had to be created. No gardening, except an idea how to grow moderately well a very limited number of plants. Times of sowing to work out (September there approximates to April in England.). Trees and plants all to name—*Sterculia platanifolia* as a 50 feet-high tree does not look at all like the plant in a 6-in. pot in the Temperate House. No "Gardener's Chronicle" to tell one how to construct a Bowling Green, the name of a bug and how to deal with it, or how to construct a Greenhouse. No "Gardening Illustrated" to explain how to mark out a Base-ball diamond, a Croquet court, or how to construct rustic bridges and tea houses. Everything to find out on the spot, employing only local material. It makes one think, but soon creates that Spirit of Independence which prevents him from going outside his own realm for supplies.

During my period I only went outside for seeds, bulbs, plants, mowing machines, a limited amount of tools and greenhouses (they all came from Edinburgh). When Mr. Giles came out he was given charge of an Orchid House as he was considered a Specialist. Scale appeared on Cattleyas, he demanded XL ALL Insecticide; he was told that the nearest was 10,000 miles away and introduced to a home-made specific which he found effective, and in future was content with Home produce. Giles was the most delightful companion anyone could possibly have. He gave up his life in the Great War.

Land for parks is expensive, as much as £3,000 an acre; higher prices have been paid, but only to round off sections. The Public Gardens must rank amongst the most valuable of park lands, it is assessed at fully £150,000 an acre, so also is the British Consulate of which the Public Garden was originally its foreshore. When purchased, land at the best needs raising two feet for gardens, four feet to grow shrubs and some trees, six feet for conifers. Sections of what is called the "Botanical and Decorative Park" were raised 18 feet above the original level. This high raising was done as much to secure an undulating surface as for the special trees which are planted thereon. Park building under these conditions was a costly undertaking, and had to be spread over a number of years. Yet five years ago it was considered we had for the time enough park land; the city possessed 1.25 acres for every 100 of her population—Parks were built only for the foreign, non-Chinese inhabitants—in all 35,000. The largest park area then known possessed by a city in comparison with her population was Minneapolis, U.S.A., having 1 acre for every 138 inhabitants. Last year the parks were opened to Chinese, when all visitors had to pay for admission. A Season ticket for the year giving admission to all parks at any time cost 2/-, one admission 4d.

The last five years have been mainly devoted to rounding off the parks with necessary buildings. An open air swimming pool with dressing rooms. Three office and store blocks in the parks

which form a district centre, each comprising Foreign Assistant's Office, an office for Chinese clerks, Blacksmiths' and Carpenters' workshops, Store-rooms, Seed and Bulb Stores, Tool Sheds, Petrol Tanks, etc., Dressing rooms in Recreation Grounds, Lavatories for men, women, and children; separate structures in all spaces, all furnished with the most modern fixtures, even full length mirrors in some of the ladies' rooms. Telephones are provided free to the public in the gate houses of the chief parks, where "First Aid" boxes are kept. Telephones are also provided in each of the Foreign Assistant's Offices. Refreshment houses are let to the Contractor, who supplies the public with food and drinks at the lowest possible price compatible with efficient service. Boiling water for tea and other beverages is supplied free.

Shanghai, which was little known 25 years ago, now ranks as the sixth largest city in the world, possesses the fifth largest harbour, the tallest skyscraper building built anywhere outside of America, and a number of other buildings, but slightly lower. Her street illuminations equal Piccadilly Circus. Her traffic problems exceed in amount of vehicles passing a given point, Hyde Park corner records. Her Electricity Department, then more or less a one-man show, was sold at the beginning of this year for £12,000,000 to an Anglo-American combine—a sum which wipes off all debenture issues and every other indebtedness, and leaves a comfortable balance. Eighty-seven years ago the site of this town—a houseless, treeless marsh, its highest point barely four feet above water level and situated at the furthestmost possible point from the trade centre—was conceded to Great Britain for her merchants. The Chinese assumed that it would be found impossible to develop, but the British merchant thought otherwise. Her future is "on the Lap of the Gods," at present not too rosy, but were it tomorrow created an independent Republic, freed from national and political intrigue, administered as in the past by her merchant princes, there is every indication that neither London nor New York would be far ahead of her in another century.

Since my return I have been frequently asked if I am not glad to be in England and well away from that awful heathen country. I am glad to be in England, yet if the three extremely hot months of the summer in China could be cooled down to a normal temperature, I would just as soon be there.

The Chinese I dealt with were splendid, better workmen I never expect to meet, nor in the main, better friends. Certainly the bulk of them I knew intimately were farmers, the best type of men there as well as in most countries. I know their bad points and they are many, but their good points are at the least equal. To their face I call them heathens, chinks, and sometimes worse, but that is a pleasantry I have reserved rights in, but I do not like to hear people who do not know them referring to them in that way. With tact and patience the workmen can be taught perfectly. At hand work they are marvellous, although not as wonderful farmers as

the early books on China would indicate, they are better than Western people of to-day give them credit. Their methods are crude, the same to-day as they were 2,000 and more years ago ; there are, however, signs that they were more advanced in Agriculture three or four thousand years ago. During this long period they have grown good crops on the same soil, never digging it more than four inches in depth, and fertilizing it only with night soil, ashes or straw and other vegetable matter to which, occasionally, bean cake is added. Green manuring with leguminous plants has been practised from time immemorial ; excreta from buffaloes and other cattle is not plentiful but used when obtainable and, like green manure, is dug in ; the other fertilizers are used almost exclusively in a liquid form. Waterways thread through the valleys all over the country, are pumped out in section about once in ten years, and the mud containing decayed vegetable matter deposited in them is dug out and used for top dressing. This silt is the only manure ever employed on bamboo plantations. Owing to the flatness of the land and its nearness to the water level, the soil is ridged, forming surface drains. This ridging is partly responsible for having evolved the multiple cropping system in vogue, which in market gardens results in four crops being produced in the year. Intensive culture and small holdings is the reason why on only 15% of its whole area China can produce food for 400,000,000 people. The average annual income derived from an acre of land in the vicinity of Shanghai is about £2 by the farmer and £3/5/- by market gardeners. Crops usually cultivated are : in the summer—cotton, rice, Soya beans, peanuts and sweet potatoes ; in the autumn, harvested in April—wheat, barley, broad beans and potatoes for foreign consumption. Fruits grown include peaches, loquat, persimmon and water melons, while bamboos and mulberries, for the silk-worm industry, are also cultivated.

Chinese methods of agricultural practice are effective there, and whilst they cannot be adopted here, observant people can, by reasoning out the why-and-wherefore of these methods (the Chinese farmer can only explain they belong " old custom ") peculiar as they may appear, especially at first, learn much and realise that they were originally founded on advanced scientific and practical principles.

D. MACGREGOR.

THE NATIONAL PARK AT MONT-AUX-SOURCES, NATAL, AND ITS FLORA.

THE Natal National Park, essentially a nature reserve, is some 20,000 acres in extent and situated in the middle of the Drakensberg mountain range which runs down the eastern portion of South Africa. It includes Mont-aux-Sources, the highest point in South Africa and embraces some of the most magnificent mountain scenery.

The area occupied by the Park had been reserved by the old Natal Government as a National Park, and after Union in 1910 its administration and development was formally entrusted to the Natal Provincial Council. An annual grant is made by the Council for the upkeep and improvement of the Park, which is maintained firstly as a nature reserve and secondly as a resort for residents in South Africa and visitors from overseas desirous of enjoying the majestic scenery and exhilarating atmosphere of the "Berg." In the past, much of this grant has been spent in the construction of bridle paths to the more out-lying places of interest, which are now more get-at-able for the average visitor.

A good motor road connects the Park with the village of Bergville, which is the nearest railhead and some 35 miles distant. A comfortable hotel or hostel, built for the most part of thatched "rondavels" or huts in truly South African style, has been erected at the entrance to the Park for the benefit of visitors. The management of the hostel and catering is under official control and splendid accommodation and treatment are provided at a very reasonable cost. A Government motor coach will convey passengers to and from the station though the majority of visitors arrive with their own motor conveyance. For the benefit of those desiring other attractions than daily excursions into the mountains on foot or horse-back there are tennis courts, a golf course (in course of construction) and good bathing in the clear pools of two local streams. An attempt to stock these streams with Loch Lomond trout has met with great success. Good sites exist for camping and camping parties are to be seen in the summer months, while interesting Bushmen paintings occur in some of the old caves in the neighbourhood.

Mont-aux-Sources itself is not really a peak but a small area of high moorland at an altitude of 11,000 feet or more, where Natal, the Orange Free State and Basutoland meet, and rivers fall away on the one side to the Atlantic and on the other to the Indian Ocean. It is the source of the Tugela River, the largest river in Natal, and of the Orange River which, after crawling slowly through the sun-baked hinterland of South Africa eventually reaches the Atlantic, a thousand miles from its source.

The climate of the National Park, in common with that of other parts of the Drakensberg, is characterised by a cold, dry winter and warm summer. It is in the summer months that the rainfall (about 30 inches per annum) occurs, generally in the form of showers and afternoon thunderstorms. At this high altitude, with its clear atmosphere, insolation is far more intense than in the lower-lying areas. This makes itself manifest by the chronic sunburn that the unwary visitor is so prone to fall a victim to. Heavy mists are liable to appear with extraordinary rapidity in the rainy months, and the need for a native guide when off the beaten track is a very real one. In winter the mountains are frequently covered with snow for longer or shorter intervals. None of the Drakensberg mountains, however, rise above the climatic snow-line, which in the latitude of Natal would be about 13,000 feet. The sporadic nature of the snowfall is no doubt to be accounted for by the dryness of the atmosphere and lack of precipitation during the cold season.

There are few, if any, localities in South Africa of greater botanical interest than the National Park. From the hostel or entrance to the Park to the summit of Mont-aux-Sources one ascends no less than 6,000 feet. During this ascent one of the most striking features of the vegetation is the extraordinary number of separate types of plant community that are encountered. In the lower areas and along the river banks and ravines there is forest of a rather mixed type, with "Yellow-woods" (*Podocarpus spp.*) the most common species. Other trees occurring in the forest are "Natal Mahogany," "Sneezewood," "Red Pear," "Ironwood," "Knobwood," and the mauve flowered "Cape Chestnut." As one ascends, the forest gives way to scrub, consisting largely of "Oudehout" (*Leucosidea sericea*) and an interesting tree Umbellifer (*Heteromorpha arborescens*). This in turn is replaced by a more sclerophyllous stunted type of scrub, in which *Ericas* largely figure. Mountain grass-veld occupies the even slopes wherever a soil covering occurs and on some of the buttresses reaches nearly to the summit. These grasses grow in hard, compact tufts and belong largely to such genera as *Festuca*, *Poa*, *Koeleria*, *Microchloa* and *Harpechloa*, and are to be regarded, therefore, as being for the most part of temperate stock. The grass-veld is broken at intervals by the occurrence of the "Sugarbush" (*Protea abyssinica* and *P. roupelliae*) and the "Berg Bottlebrush" (*Greyia Sutherlandi*). These trees grow more or less isolated from one another, giving a park-like effect similar to the thorn veld so common throughout lower altitudes in Africa. The *Proteas* are small trees possessing in this area gnarled black trunks, but when in flower present a handsome spectacle with their large pink flowers.

Throughout the grass-veld and particularly in the immediate neighbourhood of scrub a number of interesting species occur, such as dwarf *Encephalartos* (*E. Ghellinckii*); the Natal tree-fern, (*Cyathea Dregei*), *Sutherlandia frutescens*, well known in

cultivation in this country, and the peculiar *Anemone Fanniniae*, the latter confined more to moist situations. Pelargoniums are common and so are woolly-leaved Composites, particularly species of *Helichrysum*.

The "vleis" and marshy spots to be found along stream banks support an interesting type of vegetation. Grasses and sedges are dominant though the numerous associated species are perhaps the more interesting. A number of showy ground orchids occur belonging to such genera as *Satyrium*, *Disa*, *Habenaria*, *Disperis*, *Pterogodium* and *Brownleea*. There are other ornamental bulbous Monocotyledons present and as some of these plants are comparatively rare, their protection is rightly being rigidly enforced.

The vegetation of the bleak exposed mountain tops, which are on the whole flat, is, as would be expected, of an extremely xerophytic nature. The growth forms are obviously designed to give the greatest possible protection, and the rhizomes and shoots are often closely interwoven, giving a carpet-like effect. Heaths and tufted Composites predominate. Over some areas there is no vegetation at all, the surface being covered with débris consisting of small angular fragments of rock. This forms a porous, spongy layer from four inches to a foot or two in thickness in the depressions.

The large number of plant communities and the richness of the flora in species in this area are no doubt accountable for by the tremendous range in environment that exists for plant growth. There are cold exposed areas on the one hand and on the other actually frost-free localities, due to the rapid cold air drainage that takes place from the smaller to the larger valleys. Densely shaded spots occur, never reached by direct sunlight, and in the vicinity of the numerous dripping waterfalls conditions are intensely moist. Such conditions contrast strongly with the more normal surrounding ones.

It is permissible to assume that under such varied conditions new species are more likely to have evolved than elsewhere, an assumption supported by the fact that some rare endemic plants have been found in this area. Such an area should be preserved as far as possible in its natural state, for man's interference in the form of grass-burning, deforestation, excessive grazing or unscrupulous flower-gathering would be only too liable to cause the complete disappearance in time of some of the more interesting species. There is every reason for satisfaction therefore, in knowing that this unique botanical area is to remain the property of the Union Government as a reserve, and that Nature's processes are to go on under the influence of natural environmental conditions without human interference. Future generations of naturalists and nature-lovers will be grateful to those who conceived and brought to fruition the idea of a "National Park" at Mont-aux-Sources.

F. N. HOWES.

THE COCOA INDUSTRY OF THE GOLD COAST.

THE one product which has contributed more than any other to the progress and prosperity of the Gold Coast during the past quarter of a century, is COCOA. Though the Royal Botanic Gardens, Kew, do not appear to have had any share in the honour of introducing that exotic tree, nevertheless many Kewites have taken an active part in fostering and encouraging the development of the Cocoa Industry of the Gold Coast. The first Kewite was Mr. William Crowther, who was appointed Curator of the Botanic Gardens, Aburi, in 1890. The inception of the Department of Agriculture on the Gold Coast, may therefore, be reckoned as the 16th March, 1890, the date of Mr. Crowther's arrival in the Colony.

The Cocoa Industry was then in its infancy stage, but with every appearance of a healthy life in front of it. It may have been quite a coincidence that the first cocoa beans exported from the Gold Coast (according to official records) were in 1891, and apparently only a sample lot of 80 lbs., valued at £4. In 1892, the shipment of cocoa had increased to 240 lbs., and by 1895 the year Mr. Crowther unfortunately succumbed to an attack of malarial fever, the exports of cocoa had risen to 13 tons.

Mr. F. E. Willey was another Kewite who saw service on the Gold Coast from 1893 to 1895, when he was transferred to Sierra Leone. Mr. C. H. Humphries was appointed by the Director at Kew to succeed the late Mr. Crowther in 1896 but unfortunately he was invalided from the service in 1898. Mr. W. H. Johnson appears to have been the next Kewite to be appointed as Curator, in 1898, afterwards being promoted to be the first Director of the Department of Agriculture in 1904, from which position he resigned in 1906. During the period Mr. Johnson was responsible for the management of the Department, the Cocoa Exports from the Colony increased from 185 tons in 1898 to 8,975 tons in 1906. Two other Kewites served under Mr. Johnson; first, Mr. T. W. Brown from 1899 to 1901, who afterwards went to Egypt where he made a name for himself. The other Kewite was Mr. A. E. Evans, who succeeded Mr. Brown in 1901 as Assistant Curator, was promoted Curator the following year, and in 1907 was appointed Travelling Instructor, the title afterwards being changed to that of Travelling Inspector of Agriculture. Mr. Evans acted as Director of the Department on many occasions. On the re-organisation of the Department in 1919, Mr. Evans was appointed Senior Superintendent of Agriculture, from which position he retired on pension in 1922 after serving in the Department for over 21 years.

There was hardly a part of the Gold Coast with which Mr. Evans was not familiar and his periodical visits to the Cocoa districts were always welcomed by the Chiefs and the Cocoa farmers. Travelling to-day on the Gold Coast is luxurious compared to what Mr. Evans had to contend with during the greater part of his official tours of inspection, especially when obliged to travel in the wet

seasons, as he often had to do. The steady increase in the exports of cocoa from 980 tons in 1901 to 159,305 tons in 1922 clearly show that the Cocoa Industry had developed into a very healthy child before Mr. Evans retired from the Colony.

Other Kewites who have service on the Gold Coast to their credit are Mr. W. Donn, 1903 to 1905, when he was transferred to Nigeria where he unfortunately succumbed to malarial fever a few years later. Mr. James Anderson, 1905 to 1910, who resigned to take charge of a rubber and kola estate in the Colony. Mr. K. Burbridge, 1906 to 1909, when he was transferred to the Forestry Department, afterwards going to Sierra Leone, from which Colony he has recently retired on pension with over 21 years' service to his credit. The writer also was associated with the Department of Agriculture from 1908 to 1911 and, like Mr. Anderson, was tempted to resign to take up more lucrative work in the Colony and has been closely associated with the Gold Coast ever since. Other Kewites still serving in the Department of Agriculture at the time of writing, are—Mr. A. C. Miles, who has held various positions in the Department since he first joined it in 1909. On a recent re-organisation of the Department, Mr. Miles was placed in charge of the Agricultural Statistics Section. Mr. A. B. Culham, who first saw service in Nigeria, has recently been placed in charge of Plant and Produce Inspection, a position which brings him closely in touch with the Cocoa Industry. Mr. T. Hunter is another Kewite who has been doing excellent work as Superintendent of the Agriculture and Forestry Training Centre at Kumasi, a position he has held for several years. Mr. G. H. Eady, who joined the Department in 1921, has been recently placed in charge of the Horticulture activities of the re-organised Department. Mr. W. C. Fishlock is another Kewite with nearly thirty years' tropical experience, of which nearly a third has been spent on the Gold Coast. Mr. Fishlock is now in charge of the Experiment Stations devoted to Coconuts. Mr. S. T. Phillips is attached to the Plant Inspection staff, which is closely concerned with the thousands of cocoa farms in the Colony. There are two other Kewites deserving of special mention and they are Mr. and Mrs. W. H. Patterson. Mr. Patterson for the past 16 years has occupied the position of Entomologist to the Department of Agriculture and Mrs. Patterson has been his unofficial assistant. It would occupy too much space to even briefly record the valuable services which Mr. Patterson has rendered to the Gold Coast, and to the Cocoa Industry in particular.

The above account by no means includes all the Kewites who have served in the Department of Agriculture and who have in various ways contributed and assisted in the development of the Cocoa Industry since 1890.

The honour of introducing the first cocoa seeds and raising the first cocoa seedlings on the Gold Coast goes to a Foreign Missionary Society. The first lot of cocoa seeds appear to have been imported by the Basel Mission Society from Surinam in 1856, but apparently owing to delay in transit, the seed failed to germinate. Further

supplies of seed were imported and by 1861 ten seedlings were raised. By 1863 only two seedlings appear to have survived, the others having been destroyed by insect pests. In 1865 the survivals began to flower and by the end of that year about a dozen cocoa pods were gathered. Some of the ripe pods were sent to other Mission Stations in the Colony for the purpose of experiments. For many years the credit of introducing the first cocoa seed was given to an African by the name of Tetteh Quashie, who was supposed to have brought them back in 1879 from Fernando Po where he had been employed as a labourer on the cocoa plantations in that Island. Though no one seeks to dispute the fact that Tetteh Quashie brought back cocoa seed from Fernando Po, it is clearly evident from a search made of the Basel Mission records at Basel, that the honour for introducing and raising the first cocoa seedlings on the Gold Coast goes to the Society.

Though the Basel Mission Society may have helped materially to give the Industry a start, it is to the African farmers on the Gold Coast to whom the greatest credit is due for the way they have gone ahead and planted up their land with cocoa. Some idea of what has been achieved may be gleaned from the quantity of cocoa beans exported for the past three years 1926-28, namely 660,572 tons, valued at over thirty million pounds sterling. Any stranger arriving during the busy cocoa season might well wonder why the Colony should be called the Gold Coast and not by its principal product of export, the not unpleasant smell of which greets one at almost every port.

R. BAND.

A SHORT TOUR IN JAVA.

THE opportunity offering itself, I decided this year (1929) to spend a short holiday in Java, principally to visit the Buitenzorg Botanic Gardens and the mountain garden at Tjibodas. I also promised myself a chance of seeing some of the places which are often mentioned in the travellers' tales of earlier times. There is, perhaps, no part of the East which grips one with such an atmosphere of mystery as Java. Some fifty or sixty years ago, when the country was first becoming known in Europe, the natives were looked upon as pirates and poisoners who would, at the least provocation, kill anyone who crossed their path, while the country was considered to be a land of dense trackless jungle, inhabited by wild animals and yet wilder men.

The Java of to-day, however, is not such a land of terror, although it still maintains its atmosphere of mystery. There are yet vast areas of unexplored country ranging from sea-level to about 12,000 feet covered with virgin jungle in which tigers, panthers, elephants, tapirs, Malay bears and wild boar abound. The mountain tops are covered with tropical alpine flora, while the trees at lower elevations are clothed with orchids, the flowers of which hang in festoons from the branches. The most conspicuous ground orchids are species of *Phaius*, nearly six feet tall, *Calanthes* and *Spathoglottis*.

Having introduced this fascinating country to the reader, I will proceed with my narrative.

Leaving Taiping and proceeding by train to Singapore, I boarded a Dutch boat for Batavia, and after a smooth and pleasant trip of about forty hours Tandjong Priok (Batavia) the Western port of Java was reached. Arriving there I hired a car to take me to Weltevreden, which is the residential part of Batavia. The route takes one along an avenue formed by the spreading branches of Flame Trees (*Poinciana regia*) which are covered with their brilliant scarlet flowers, to old Batavia with its picturesque Dutch buildings, narrow streets and canals.

After a few hours' stay in Weltevreden I entrained for Buitenzorg which is about 70 minutes' journey in an express train. On both sides of the track, and for the greater part of the way, can be seen vast tracts of typical Javanese scenery, rice fields, large areas of tapioca, ground nuts and stately Kapok Trees (*Eriodendron anfractuosum*) while here and there were rubber plantations. Buitenzorg is situated at an elevation of about 800 feet and is noted for its delightful climate. The principal feature of interest is the Botanic Garden, which is famous throughout the world. It was founded in 1817 by Dr. Reinwardt, who was at one time a professor of botany at Amsterdam. Other well-known botanists who have had charge of the gardens are Blume, Teysmann and Treub, while Dr. Docters van Leeuwen is the present Director.

The gardens are about 200 acres in extent and contain a wealth of trees, shrubs and plants from all the tropical regions of the world. Apart from its role as a botanic garden, Buitenzorg forms the nucleus of the Agricultural Experiment Station.

The main entrance to the Gardens is approached by a tunnel-like avenue of "Kanari" trees (*Canarium commune*), the top branches of which meet and form an arch nearly a hundred feet above the ground. Growing upon their trunks were various large climbing aroids, including *Philodendron erubescens*, *P. panduriformis* and species of *Rhaphidophora* and *Epipremnum*. Many flowering trees and shrubs were to be found in various parts of the Gardens, among which were several showy species of *Cassia* and *Bauhinia*. *Saraca declinata* was a mass of yellow, while the sweetly fragrant flowers of *Fagraea littoralis* were borne in great profusion. The red-flowered *Calliandra haematocephala* and *C. pertoricensis* with its white rosette-like flowers were both quite at home here. Several specimens of *Aglaia odorata*, whose flowers fill the air with their delightful fragrance, may be seen. One or two fine specimens of *Swartzia pinnata* with yellow flowers, which are borne on the old wood, and the lovely *Stiffia chrysantha* are to be met with. The striking *Lagerstroemia indica* blossoms beautifully and is generally successful although the climate is rather too damp for it.

Other interesting subjects were *Myristica fragrans*, the nutmeg tree, with fragrant flowers, and the Iron-wood tree, *Mesua ferrea*,

a cone-shaped tree with sweetly-scented white flowers and beautiful pink young growths. Among the members of the Order *Magnoliaceae* were the Champaka (*M. Champaca*), a well-known Malayan tree and the shrubby *M. pumila*, which is easily distinguished by its tulip-shaped white flowers. The large, delicate white flowers of *Camoensia maxima* cannot fail to attract attention, while the *Clerodendrons*, with their peculiar shaped blossoms, may be observed. *C. incisum* var. *macrosiphon* has been aptly called by the Dutch "vraagteeken" (meaning "note of interrogation"). *Rondeletia odorata* which is quite often met with in the gardens of residents appears to thrive here. A very familiar flower in the East is *Antigonon leptopus*, which is often called "red bride's tears" in contrast to *Porana volubilis* which is known as "white bride's tears." The brilliantly flowered *Congea velutina* and the pretty blue-mauve flowers of *Petraea volubilis* are always objects of interest to visitors.

Among the Bignoniaceous trees were *Spathodia campanulata*, with its large tubular orange-red flowers borne in huge clusters at the ends of the branches; *Heterophragma maculobium*, a lofty tree, eighty feet tall which bears a profusion of delicate white semi-campanulate flowers; *Stereospermum chelonoides*, bearing small pinnate leaves and light yellow flowers, and the Indian Cork tree (*Millingtonia hortensis*) with numerous delightfully fragrant, white, tubular flowers.

The most showy of the Leguminous trees were, perhaps, *Peltophorum ferrugineum*, a lofty tree with a spreading habit—the flowers are bright yellow, scented and produced in great profusion on erect panicles; *Milletia atropurpurea* with its dense panicles of dark purple flowers; *Brownea grandiceps*, a short tree with bright red flowers borne in clusters at the ends of the branches, and *Amherstia nobilis*, which is one of the most striking sights when in blossom. The gorgeously coloured flowers hang in clusters of red and yellow among the vivid green foliage. Other attractive trees were the bluish-mauve flowering *Jacaranda mimosaeifolia*; *Cordia asperima*, with orange funnel-shaped flowers; *Pachira insignis*, bearing fleshy white or red flowers; *Solanum macranthum*, a pretty little tree with purplish-blue flowers which resemble those of the potato, to which it is related; and numerous groups of the "Temple Tree" (*Plumeria acutifolia*).

In one section of the gardens several trees with curious fruits are to be seen; these include the "Cannon-ball tree" (*Couroupita guianensis*), a quaint tree which bears on its trunk huge ball-shaped fruits about the size of the human head; the "Candle" tree (*Parmentiera cerifera*) with long clusters of yellow fruits; the "Calabash Tree" (*Crescentia Cujete*) with its gourd-like fruits, and the "Sausage Tree" (*Kigelia pinnata*).

The palm section, for which the Buitenzorg garden is renowned, contains many rare and beautiful specimens. Among the most interesting are *Phytelephas Poeppigii*, the seeds of which yield vegetable ivory; *Acoeloraphe Wrightii*; the "Talipot Palm"

(*Corypha umbraculifera*); *Martinezia erosa*, with its spiny stem; *Hyphaene ventricosa*; several species of *Latania* with fan-shaped leaves, and the elegant *Caryota Cummingi*. It is impossible to mention here all the genera and species, but in addition to the above, *Oncosperma*, *Borassus flabellifer*, species of *Arenga*, *Areca*, *Phoenix* and the West African oil-palm (*Elaeis guineensis*) may be seen.

The water garden is almost unique for its completeness, especially in the tropics, where extensive collections are rather rare. Not so at Buitenzorg, however; one may see the "Weeping Willow" (*Salix babylonica*) growing fairly successfully, while nearby are such tropical aquatics as *Nymphæas*, *Nuphars*, *Nelumbiums*, etc. A large clump of *Susum anthelminticum* growing on the edge of the pond is of interest, between the leaves may be seen the pretty mauve flowers of *Vanda Hookeriana*. There are also several plants of *Aneilema spiratum*; a Mimosa-like plant, *Neptunia plena*, and the "Lattice-leaf plant" (*Aponogetum* syn. *Ouvirandra fenestrale*).

Among other water plants mention might be made of *Equisetum debile*; *Ipomoea reptans*; *Typha* spp., *Sagittaria montevidensis* and *S. lancifolia*; *Lasia spinosa*; *Nipa fruticans*; *Acrostichum aureum* with its beautiful robust fronds, and *Acorus Calamus*. The giant water-lily (*Victoria regia*), the history of which is a splendid example of the work of intrepid plant collectors may be found in another part of the Gardens.

In addition to the economic plants mentioned, the following may be met with: Camphor, Cinnamon, Ginger, Castor-oil, Ground-nut, Arrowroot and many others. While among fruit trees, mention might be made of the Mangosteen (*Garcinia Mangostana*), Malay Apple (*Eugenia malaccensis*), Papaya, Banana, Avocado pear, Chiku (*Achras Sapota*), Rambutan (*Nephelium lappaceum*) and Guava.

Two or three excellent specimens of the "Travellers' Tree" (*Ravenala madagascariensis*) may be seen, while other ornamental trees include *Araucarias*, *Agathis alba*, *Pinus Montezumae* with its long needles, and a specimen of *P. Merkusii*, an elegant tree from Sumatra. Mention must be made here of the "Waringin" (*Ficus benjamina*) which may be seen growing in parks and in front of the head-man's house—the meeting place of the natives.

In a shady part of the Gardens, growing upon the stems of *Plumeria acutifolia*, innumerable epiphytic orchids were to be seen. Among the commonest were *Dendrobiums*, *Bulbophyllums*, *Cœlogynes* and *Cymbidiums*, but many other genera were represented. Especially noticeable, however, were the large plants of *Arachnanthe Lowii* with their long racemes of yellow and crimson flowers. *Coelogyne Forstermanni* with racemes nearly two feet long, bearing from ten to twelve snow-white flowers which have a citron-yellow lip, were a beautiful sight. *Erias*, *Pholidotas*, *Peristerias*, *Vandas* and *Phalaenopsis* were all represented by fine,

healthy plants. The fern collection nearby is equally interesting and contains many beautiful specimens. Perhaps the most attractive, however, was *Platynerium Wilhelminae-regina*, a nest-like plant which receives the leaves as they fall from the tree upon which it is growing and becomes its principal food supply. *Antiopteris*, *Davallias*, *Drynarias*, *Adiantums*, *Aspleniums* and *Dryopteris* were also largely represented.

Of the local timber trees *place d'honneur* must be given to the "Rasanala" (*Altingia excelsa*) whose trunk is as straight as a pillar and does not develop a branch until it is about 80 feet tall. It is a native of the mountain regions of Java, and trees 160 feet tall have been recorded. *Ficus cordifolia* and several species of *Shorea* with their stately stems and branches were most noticeable. The myrmecophilous plants always attract attention, the most interesting of which is *Dischidia Rafflesiana*, a climbing plant with two kinds of leaves, flat and tubular; the latter are hollow and are inhabited by armies of ants. *Cecropia peltata* is another member of this section of plants.

In addition to the gardens, Buitenzorg is the scientific centre of Java. The Department of Agriculture has its offices and experimental stations there, while the following institutions are established in the vicinity: the Zoological Museum, Treub Laboratory, Phyto-chemical Laboratory, Herbarium and Museum for Systematic Botany, and the Laboratory for Marine Investigations and Aquarium. Lack of space does not permit of a lengthy description of the wonderful plants to be seen in this, the most beautiful botanic garden in the East; one could fill a volume—but I will proceed. Thanks to the kindness of the Director, Dr. Van Leeuwen, I was permitted to visit the mountain garden at Tjibodas, which is about 4,500 feet above sea-level. Proceeding by car from Buitenzorg along the road to Sindanglaya the open country is reached, which discloses a pretty view over valley and river with Mount Gedah looming in the background. Huge blocks of stone by the roadside indicate that the volcanoes did not always so peacefully slumber as on this quiet November morning. In a very short while my car began to feel the effects of the continual climb, so I called a halt at about 2,500 feet in order to admire the scenery. On both sides of the road were small holdings, nurseries and market gardens; among the flowering plants to be seen were masses of Gladioli, Michaelmas Daisy, and the lovely blue African lily (*Agapanthus umbellatus*), while shrubs such as *Buddleia globosa*, *B. variabilis* and *Sambucus nigra* seemed to predominate; these plants are grown for the local markets where the Javanese readily dispose of huge quantities of flowers. Twenty miles or so in the distance is the crater of Mount Salak, which could be seen towering some 9,000 feet in the sky.

Continuing my way, the car began to descend a steep hill at the bottom of which was the most dangerous looking hairpin bend that I have ever rounded in a car. The driver was an expert and quite accustomed to the route, which I may add is an essential

qualification in Java unless you wish to make a definite stay there. Having ascended about five thousand feet, the Poentjak Pass is reached ; the road was very bad and twists and turns occurred at every few yards. I stopped the car at the summit to take a look at the surrounding country. For the last twenty miles, during which the route had taken me from about 2,000 feet to 5,000 feet, vast areas of tea had been passed. Between the tea bushes, shade trees such as *Tephrosias* and *Crotalarias* were planted. The next part of the journey passed through undulating country until a more or less level road at 3,000 feet was reached. Here were more market gardens, where Carnations, *Gerbera Jamesoni*, *Lilium longiflorum*, and huge *Chrysanthemums* were growing in great profusion, while onions, sweet potatoes and carrots were planted on every available piece of ground.

Many people in Java, even the touring agents, agree that the ascent from Buitenzorg to the Poentjak Pass is scarcely possible for cars, but the large 25 h.p. American car which I was using did the journey in fine style. Some few miles further and I arrived at Sindanglaya, where I was met by a party of Soedanese coolies to whom I handed my luggage and prepared for the five-mile walk to Tjibodas. The track was fairly steep ; the first part passed through extensive native small holdings and *padi* (rice) fields in various stages of growth. The country resembled a huge patchwork quilt, here the light green of the young rice, there the darker shades of the mature plants, while intermingled could be seen golden patches of the ripe grain and the short stubbled areas of reaped fields. The land is kept in a continuous state of cultivation, one field being sown as another is harvested. About two miles from Tjibodas the cultivated land merges into dense jungle, which continues for some distance when, just beyond a turn in the path, a large expanse of undulating grassland with groups of trees and shrubs may be seen. After passing through a large avenue of *Araucarias* the hostel is reached. It is situated about 4,700 feet above sea-level in a cool and bracing climate. Nearby is a laboratory for botanists and a guest room for foreign visitors. In the book kept for recording the names of visitors I recognised those of Dr. Hill and Messrs. Taylor and Hales. Close to the bungalow are beds of annuals, small shrubs, and two splendid specimens of the Australian Black Boy (*Xanthorrhoea Priessii*) with its thick black trunk, surmounted by a crown of stiff projecting leaves.

The order beds contained a wealth of plants among which were the lovely blue-flowered *Tibouchina Lansdorfiana*, *Leonotis leonorus*, *Moraea iridoides*, *Montanoa grandiflora*, *Rhodoleia Teysmanni*, *Ardisia crenata* with its attractive foliage, and the pretty little *Abelia spathulata*. It is only possible to mention a few of the plants seen at Tjibodas so I will, to a great extent, confine myself to those which are not often met with in the eastern tropics. Several remarkably fine conifers could be seen, the best of which were *Araucaria columnaris*, with its beautiful symmetrical branches ; *A. Rulei*, *Cupressus fastigiata*, *C. lusitanica*, a splendid specimen

over 70 feet tall; *Pinus densiflora*, *Libocedrus macrolepis*, and *Chamaecyparis Lawsoniana*. Australian and American trees and shrubs were planted in groups or singly throughout the grounds, which gave it the appearance of a large park. Among these were *Tristania conferta*; the Moreton Bay Chestnut, *Castanospermum australe*; *Melaleuca genistifolia*, *Callistemon speciosa*, *Leptospermum flavescens*; *Grevillea Banksii* covered with its erect terminal racemes of crimson-pink flowers; *G. robusta* and *G. Hilliana*; *Brunfelsia americana*; *B. uniflora*; the "Tulip Tree" of Queensland, *Stenocarpus sinuatus*, and a group of Eucalyptus trees with their straight stems towering 80 feet above the ground was a magnificent sight. The virgin jungle and mountains 10,000 feet high add to the charm of this delightful retreat.

The flora at this altitude is both tropical and sub-tropical, and on the summit of Mount Pangerango, 10,000 feet, *Leptospermum javanicum*, *Ardisia*, *Rhododendron javanicum* and *Anaphalis* spp. may be seen. The view of the surrounding country leaves little to be desired; Mount Gedah, thickly covered with forest trees, can be seen from here, and at its summit the volcano which has had many terrible eruptions.

After a very pleasant stay at Tjibodas, I returned to Sindanglaya, thence to Bandoeing via Tjandjoer. As a change from things botanical I spent the remaining few days visiting native bazaars in search of mementoes. From Bandoeing I travelled to Batavia by another route, and after staying another day I took the boat again for Singapore and arrived at Taiping the following day. Throughout the whole of my trip I was given much assistance by various people and my thanks are due especially to the Director and Staff of the Buitenzorg and Tjibodas Gardens.

F. S. BANFIELD.

THE ASSOCIATION OF KEW GARDENERS IN AMERICA.

A VERY successful gathering of Old Kewites and their friends, and the second largest ever held in the United States, took place at the Hotel Brunswick, Boston, Massachusetts, on Saturday, March 23rd, 1929.

Dinner was partaken of at 6-30 p.m., those present being Messrs. E. H. Wilson, J. Ellis, R. Cameron, R. Barton, J. McGregor, T. D. Hatfield, F. Lazenby, W. H. Judd, T. H. Everett, G. Pring, A. J. Thornton, G. W. J. Ford, C. J. Agate, J. Birkentall, J. A. Semple, L. Durchanek and H. Riebe.

The guests were Leonard Barron, H. L. Skinner of Wisley, Mrs. W. H. Judd, Mrs. Smith, Miss Grace Ellard, and Miss Jane Hatfield.

After dinner, Mr. E. H. Wilson, who presided, emphasised the part played by Old Kewites in the success of the Centennial Flower Show, then in progress under the auspices of the Massachusetts Horticultural Society, and how some of those present had won richly deserved honours. One of the ten Centennial Medals in gold was awarded to the rock garden exhibits staged by Mr. A. J. Thornton, and the displays by Mr. T. D. Hatfield and Mr. G. Pring had also been suitably recognised.

Following some songs rendered by a few of the members and a report of the previous year's meeting from the Secretary, Mr. Wilson introduced Mr. Leonard Barron, who was reminiscent of his early days at Chiswick, where his father was Superintendent of the Royal Horticultural Society's Garden, and of his visits to Kew where, in 1890, he had the annoying pleasure of seeing in flower *Amorphophallus Titanum* when Mr. Nicholson was Curator. Mr. Pring gave a short history of the Missouri Botanic Gardens, known locally as Shaw's Garden at St. Louis. At the age of eighteen, Mr. Shaw came to America from England and by the year 1847 had made three quarters of a million dollars as a dealer in skins. Mr. Shaw's visit to England in 1848 caused him to want a garden at St. Louis similar to those he saw in England, and his endeavours resulted in a friendship with such men as Asa Gray, George Engelmann and Sir Joseph Hooker. On his death in 1889, Mr. Shaw left his garden in the care of Trustees for the people, and was buried in a mausoleum erected in the garden. Mr. Pring followed with an amusing and interesting account of his recent visit to Costa Rica and the Panama Canal Zone, where at the latter place the Missouri Botanic Garden has a tropical station in which chiefly to grow Orchids.

The remainder of the evening was spent in renewing old acquaintances and making new ones, and the general feeling of sociability that prevailed led those present to decide that another meeting must be held in 1930. So take notice, you absent Kewites from the eastern part of the United States, and do your utmost to try to be with us next year.

The Treasurer informed us that the association still owns the sum of twenty-one dollars.

W. H. JUDD,
Secretary-Treasurer.

IN MEMORIAM.

LIONEL COTTINGHAM BURRELL, M.A., M.B.,
B.C., (Cantab.), M.R.C.S., L.R.C.P.

It was with profound regret that news of the death of Dr. L. C. Burrell in the Northampton General Hospital following an operation on February 24th, 1929, was received at Kew and as the 1929 issue of the Journal was already in the printer's hands, it was only possible to make brief reference to our late Medical Officer in that number.

Lionel Cottingham Burrell was born at Stoke Newington on November 17th, 1866, and was educated at Oundle-School, and later at Caius College, Cambridge. As he desired to follow the medical profession his studies were continued at Guy's Hospital, London. He first practised at Kew in 1897, and in March, 1899, was appointed Medical Officer to the Royal Botanic Gardens, Kew. He held this position until March 31st, 1922, when he disposed of his practice in the Kew neighbourhood, to the great and real regret of a wide circle of friends, among whom could be counted the Staff of the Gardens and those who during twenty-two years had been associated with him.

Dr. Burrell associated himself with the Kew Guild on every possible occasion. He was a Life Member and in 1909 was Chairman at the Annual Dinner. His genial disposition was even more marked when participating in his various pastimes which included Rugby Football, Golf, Tennis and Bowls, and on many occasions he proved himself a very valuable member of the Garden's Cricket Club.

His activities were not confined to these pastimes, however, for he founded the Kayhough Masonic Lodge, and on two occasions was its Worshipful Master, and was also a very energetic member of the Royal Kew Lodge.

On leaving Kew in 1922 he practised at Wansford, near Peterborough, until his death. While at Wansford he founded the Peterborough Rugby Football Club and became its President and formed the Wansford Ambulance Brigade.

Many Kewites, probably the majority of whom are now resident overseas, will recall his genial disposition and sportsmanlike character and on their behalf we wish to record our deep sympathy with Mrs. Burrell and her daughter Leone who, as Mrs. S. T. Lees, is a well-known member of the Guild.

E. G. D.



ROBERT KETT.



DR L. C. BURRELL



JAMES A. THOMPSON

ROBERT KETT.

To all who knew Mr. Robert Kett, and he had a wide circle of friends at home and abroad, the news of his tragic death in Cairo was fraught with painful regret for a capable and useful life prematurely closed, and poignant sorrow for the loss of a fine, loyal and happy soul, beloved by all with whom he came in contact.

Mr. Kett was of a robust and vigorous build, a crack shot, a good sportsman, and just that type of man for whom one would wager a life reaching a green old age. And it was in the prime of his life, strength and manhood, that death overtook him. Knocked down by a motor-car on the night of March 23rd, 1929, as he was crossing a street in Cairo, he was very severely injured, a thigh and several ribs being fractured. For four weeks he lay in the Anglo-American hospital, and to all appearances his splendid physique enabled him to recover to a remarkable degree. A serious operation, designed to restore an un-united fracture, unfortunately failed and on the evening of the same day, April 23rd, he succumbed after some hours of unconsciousness.

Robert Kett was born at Newmarket in 1882 and was the son of Mr. Albert Kett of Hatfield Peverel, Essex, a professional gardener (retired) for some time with Messrs. Veitch.

We express our sympathy with his widow and parents.

Previous to entering Kew in 1904, he was engaged at Somerlaton Hall and at Englefield House. He remained at Kew till 1908 when he distinguished himself by taking "first" in all the courses of Lectures then in vogue. In 1908 he entered the Parks Department of the London County Council, was attached to various Parks until the outbreak of war in 1914, when he joined up with his old regiment the "Queen's Westminsters," and with them left for France in 1914. He was severely wounded at Armentières and invalided home, having gained the Military Medal for gallant service. On his recovery he again returned to active service and fought in France up till the end of the war in 1918.

Resuming his work under the L.C.C. he was quickly elected by the Imperial War Graves Commission for their service in France. He superintended the laying out of the war-cemeteries there and in Belgium.

In 1920 he was appointed to the same charge in Turkey, Palestine, Syria and Macedonia. In that sphere he carried out some remarkable work and as a result of the high order of his labours he was appointed Chief Horticultural Officer in the Near East. His headquarters were in Cairo where he held the post of Deputy-Advisor and Assistant to Lieut.-Colonel Hughes, C.B.E.

Lord Plumer was greatly impressed by the beauty and excellence of the Jerusalem War Cemeteries and wrote personally to Mr. Kett expressing his "keen appreciation" of his work. Indeed, in looking over his diaries, letters and testimonials, one is compelled

to note the universal pleasure expressed by all, from Royalty and nobility to some humble mother in England whose son's grave he had tended, and to whom he had sent a kindly message of comfort.

He had the honour, as one of his last duties, of conducting Mr. Rudyard Kipling over the Imperial war graves in Egypt. The famous author was deeply impressed by the excellence of Mr. Kett's work and expressed his appreciation in a personal letter to him. On hearing of his disastrous accident, Mr. Kipling paid him several visits while in hospital, and there gave him an autographed copy of "Barrack Room Ballads," a kindly thought which afforded the patient much happiness.

Only one knowing the diverse climatic conditions of Asia Minor, Gallipoli, Egypt and Macedonia can fully appreciate the extraordinary care and labour he expended on the work he loved. Quoting from a testimonial from his chiefs:—"He had the difficult task of planting all the trees, shrubs, etc., for Gallipoli, Asia Minor and the Aegean Islands, including organisation of staff, preparations of nurseries and arranging and planting of cemeteries. This he did with highly satisfactory results. We cannot speak too highly of the skill and care he has shewn in his work and the determination to overcome all difficulties."

Mr. Kett was in office in the East from 1920 till his death on 23rd April, 1929, and during that period he paid hundreds of visits to cemeteries scattered over his province. He possessed a fine collection of photographs of most sites under his charge, and in conversation one could readily see that his whole life and ambition was centred on his work.

It was characteristic of the soldier to make light of the disaster which overtook him and finally caused his death. His work here is ended, but the seeds he sowed have made green oases amid the arid rocks, and the myriads of pines and cypresses, the fruit of his skill and untiring patience, now spread their branches to the sun and air where neither blade nor leaf was known to grow. That magic transformation of the wilderness and the desert places are his monument, as are those homes of the dead on the battlefields of Flanders, and in many a lonely spot among the sterile glens of Palestine and plains of the near East which will for all time proclaim to the world the skilled handicraft of a good and faithful servant, so surely to those who loved him and to him were dear, the "sad cypress and the lonely pine" will abide for ever as the re-incarnation of the soul and spirit of Robert Kett.

What peaceful hours I once enjoyed,
How sweet their memory still,
But they have left an aching void,
The world can never fill.

(Cowper).

Nov., 1929.

F. J. L.

SAMUEL TURNER.

It is with sincere regret that we have to record the death of Mr. Samuel Turner, the popular Superintendent of Stamford Park, Stalybridge. Mr. Turner entered Kew on September 5th, 1895, having received his early training at Whitehall, Mossley; Richmond House Gardens, Mossley; Samlesbury Old Hall, Preston, and with the Parks Department at Mossley. He left Kew on August 28th, 1897, to return to Manchester. The following appreciation is from the pen of Mr. W. F. Gullick, and will doubtless be of interest:

"Although it is over thirty years since Sam Turner and I left Kew, the friendship formed at that time continued until his death last summer. Men of that period (1895-97) will remember his sunny disposition and his gift of companionship and will, I am sure, regret his death at the comparatively early age of 57 years.

"On leaving Kew he went to Manchester Botanic Gardens for a time, thence to Tynemouth. He really commenced his career as a public park superintendent in 1899 when he took charge of the park at Dukinfield, near Manchester, where he did some excellent work. In March, 1903, he was appointed superintendent of Stamford Park, under the joint corporations of Ashton and Stalybridge, where, with seventy acres under his charge he had plenty of scope for development and achieved surprising results, notwithstanding the fact that the conditions peculiar to a manufacturing area are far from ideal for successful horticulture.

"Some ten years ago he was appointed Secretary to the Stamford Park Trust and Chief Superintendent of the Parks and Open Spaces, under the control of the Joint Committee, a position he held until his death. Last spring he had a serious illness from which he was making a good recovery when I called to see him last May. Although this improvement was maintained for a time he again collapsed early in August and passed peacefully away on the 19th of that month.

"He leaves a wife and two daughters to whom I am sure we all extend our sincere sympathy."

JAMES A. THOMPSON.

WE deeply regret having to record the tragic death of Mr. J. A. Thompson at the age of 45, who was instantly killed by lightning during a sharp thunderstorm on August 13th, 1929, while working on the estate of Mr. Walter C. Janney, "Weldon," Mawr, Philadelphia, U.S.A.

An Irishman by birth, having been born in Co. Kildare, Mr. Thompson received his early training under his father's direction in the gardens of Mr. J. La Touche, at Harristown, Brannockstown, in that county. Before coming to Kew in August, 1904, he was employed at Obelisk Park, Blackrock, Co. Dublin. Remaining at Kew for less than a year, he left to become foreman of the herbaceous grounds on Lady

Agnew's estate at Woodcock, Little Berkhamstead, Herts. In 1910 or thereabouts, he was employed at Cropwood Gardens, Blackwell, Bromsgrove. During the Great War he served in the Royal Garrison Artillery, and a letter written by him was published in the *JOURNAL*, 1919. (Vol. 111, p. 450).

On demobilisation it would appear from *JOURNAL* records that Mr. Thompson went to America, as he was in charge of the gardens at Ithan, Pennsylvania, in 1922, and in 1924 proceeded to New Jersey. He had been employed on the estate at Bryn Mawr for about four years prior to his untimely death. A widow and four children survive him and to them we extend our deepest sympathy in their sad loss.

JOHN MacGREGOR.

WE learn with much regret of the death of Mr. John MacGregor at Teddington, Middlesex, on December 20th, 1929, in his 79th year.

Mr. MacGregor was born at Maryburgh by Canon Bridge, Ross-shire, N.B., on September 30th, 1851, and began his gardening career as an apprentice in Sir Robert Mackenzie's gardens at Coul House, Dingwall. Entering the Royal Botanic Gardens, Kew, at the age of 21, he remained for his full period of two years, passing through the Tropical Aroid and Fernery Departments. Leaving Kew in September, 1874, he obtained a position in Messrs. James Carter and Co.'s nurseries at Forest Hill. He remained at these nurseries for some time, but left to gain further experience in private service, and in 1895 he was engaged as head gardener at Barrochan, Houston, N.B. Some ten years later he returned to Mortlake as foreman in charge of Messrs. James Carter and Co.'s trial grounds at Mortlake and Raynes Park. His service with this well-known firm aggregated 25 years and he left them finally in 1911. Later he secured the position of head gardener at Shottermill Hall, Haslemere, Surrey, where he remained for six years. He resided later at North Holmwood, Surrey, for some time and retired in 1923. He is survived by two sons, his wife having died in 1907, and we extend our sympathy to them in the loss they have sustained.

THEOPHILUS DAVID HATFIELD.

KEWITES in America have lost one of their best loved Associates in Mr. T. D. Hatfield, whose untimely death at Wellesley, Mass., has to be recorded. He had lived and laboured on the estate of Mr. Walter Hunnewell for forty-two years, during most of this period acting as Superintendent of the famous pinetum and garden there during the life of three generations of the family.

He was born at Cottingham, near Hull, Yorkshire, on December 29th, 1855, and previous to entering Kew in 1877 worked at the Botanic Garden (as it then was) at Hull. Recollections of his Kew days will be found in the *Kew Guild Journal* of 1927, in one of

the few letters he ever wrote for it. Leaving Kew in 1878 he was employed for a time at Syon House, Isleworth, under Mr. Woodbridge and later worked in commercial establishments at Bromley and Birmingham before going to the United States to act as foreman for Mr. George C. Woolson at the old Passaic Nurseries in New Jersey, from which establishment in 1887 he moved to Wellesley, Mass.

He possessed a masterly knowledge of most cultivated plants, especially trees and shrubs, and the newer forms as *Taxus*, as well as hybrid Azaleas raised by him are plants of first-class merit. Less than a year ago the Massachusetts Horticultural Society awarded him the Jackson Dawson Memorial Medal "for his skill in originating and propagating hardy wooded plants."

He was always ready to impart what knowledge he possessed, and much valuable information could be acquired when visiting the estate in his company. It was while gathering seed from a tree of the Carolina Hemlock, on September 30th, that he fell from a step-ladder, breaking an ankle bone, which resulted in blood poisoning. Mr. Hatfield was a very familiar figure at most of the Flower Shows of the Massachusetts Horticultural Society and for a number of years acted as one of the Judges at their Exhibitions, and during the early part of the present century was recognised as one of the best growers and exhibitors of Chrysanthemums in the U.S.A. He was a frequent attendant at the Annual Re-union Dinners of the Association of Kew Gardeners in America held at Boston, and will be greatly missed at forthcoming functions. He was twice married, surviving both his wives and by the first leaves a grown-up family of five daughters and two sons, to whom we extend our heartfelt sympathy in their loss. It is of interest to record that at his funeral on October 10th, two old Kewites acted as pall-bearers.

W. H. J.

PHILIP .BOLT.

It is with sincere regret that we have to record the passing of Mr. Philip Bolt, one of the oldest members of the Guild, who died on March 23rd, 1929, at the age of 75 years, following an attack of influenza.

Mr. Bolt had suffered a bereavement only three days before his death by the loss of his wife, who had been in failing health for some time.

Mr. Bolt entered Kew on April 9th, 1873, and left to become head gardener at Overhall, Winsford, on October 10th, 1874. As far as can be ascertained he remained in this position until the beginning of the present century, when he became head gardener to Mrs. Roylance-Court at the Manor, Middlewich, Cheshire, a post he held for nearly thirty years. Throughout such a long period of service he endeared himself to those with whom he came in contact and was a well respected personality in the Middlewich district, taking a great interest in agricultural and horticultural shows in the vicinity. Four sons and a daughter survive him, and to them we extend our sympathy in their double bereavement.

WILLIAM HENRY DREW.

DURING November, 1929, Mr. William Henry Drew of Penwartha House, Callestock, R.S.O., Cornwall, died at the age of 75 years. He entered Kew on October 13th, 1873, and left on June 6th, 1875. All trace of his movements was lost until about three years ago, when Mr. Harry Williams of Redruth, Cornwall, became associated with him. He learnt for the first time of the Kew Guild and immediately put himself into communication with Kew, with a view to becoming a member. He visited Kew two years ago and only in May last attended his first Kew Guild Annual Dinner at the age of 75 years!

Soon after leaving Kew it is learnt he joined the Clerical Staff of the Great Western Railway at Paddington, and on his retirement in March, 1914, was in the Audit Department.

His hobby always was gardening and during the years of his retirement, his leisure moments were never dull. He enjoyed excellent health but, though always active, could not be called robust. An illness which proved fatal laid him low about six weeks before his death. He leaves a widow, one daughter and five sons to whom we extend our heartfelt sympathy in their bereavement.

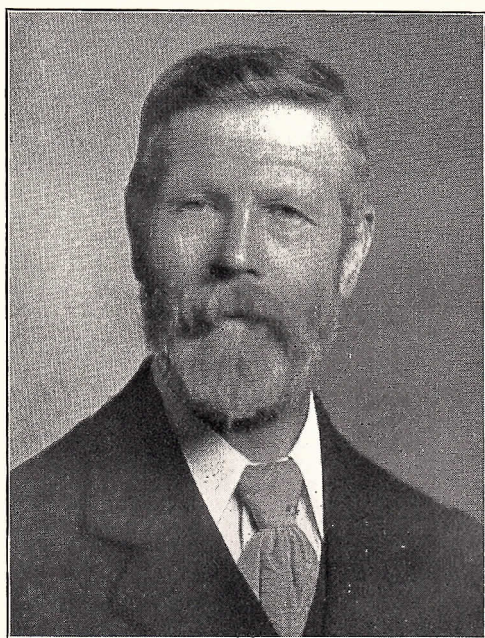
JOHN CANNING.

NEWS has reached us of the death of Mr. John Canning, who was well-known to visitors to the Riviera, being in charge of the Lawn Tennis Courts at Cannes for upwards of twenty years. The actual date of his coming to Kew is not certain, but it is believed to have been about July, 1881, and according to Journal records he left in April, 1891, having been employed in the Gardens in various capacities during this period.

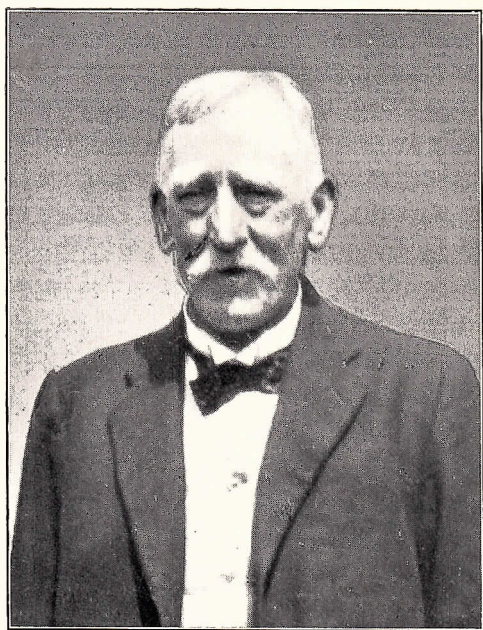
On leaving Kew he secured a position as head-gardener to Mr. R. Vyner, at the Chateau St. Annes, Cannes, A-M., France, where he remained for eighteen years. He then took charge of the grounds of the Cannes Lawn Tennis Club and was still engaged in this capacity at the time of his death. He usually called at Kew when visiting this country and was a regular subscriber to the Guild Benevolent Fund. He was of a cheery disposition, and the news of his death on November 28th last, came as a shock to those who knew him. We desire to extend our sympathy to Mrs. Canning in the loss she has sustained.

JAMES LEIGHTON.

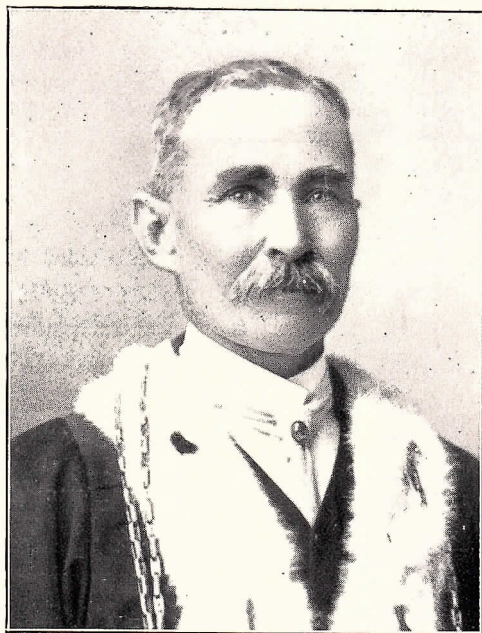
As we go to press the news has just been received of the sudden death of Mr. James Leighton of Victoria Gardens, West Bank, King William's Town, Union of South Africa. Mr. Leighton passed away in his sleep on January 22nd, 1930, at the age of 75 years, on returning from a trip to the Knysna District.



JOHN MACGREGOR.



WILLIAM HENRY DREW.



JAMES LEIGHTON

Born at Kincardine O'Neil, Aberdeenshire, on January 19th, 1855, he commenced his gardening career in local nurseries before going to Chirk Castle and later to Glasnevin, Dublin. He entered Kew on March 25th, 1878, and on May 5th, 1879, he was promoted to the position of foreman of the Herbaceous grounds, a position he held until leaving Kew on November 13th, 1880. Early in 1881 he proceeded to South Africa and within a short time was appointed Curator of the King William's Town Botanic Gardens, Cape Province, a position he relinquished in 1887 when he started the Nurseries at West Bank in the same district. He soon built up a wide connection, his fame as a horticulturist spreading throughout the Union, into Central Africa. He was a Fellow of the Royal Horticultural Society, a member of the local Town Council during 25 years, a foundation member of the Kaffrarian Museum which was inaugurated in 1882, also the South African Nurserymen's Association; President of the Eastern Province Board of Agriculture; Past District Grand Lodge Officer of the Scottish Free Masonry; Member of the Chamber of Commerce, and the South African Society for the Advancement of Science. He took a keen personal interest in research work and a very active interest in public affairs. He filled the Mayoral chair at King William's Town with thoroughness and dignity during the years 1910-11 and 1911-12, and during his tenure of office (in 1911) the municipality celebrated its jubilee.

To quote from the CAPE MERCURY of January 29th, 1930—"In Mr. Leighton's demise, King William's Town has lost a valuable citizen. He was a well-known and highly respected member of the community amongst whom he had spent by far the greater portion of his long and useful life. Mr. Leighton had in a remarkable degree that rare grace of manner to which is given the name of courtliness. It was the first trait in his character that was apparent on making his acquaintance, and is the strongest element in the memory that one retains of him, being so much more than a mere manner."

"Leaving Scotland as a young man, his botanical knowledge was already so specialised that he was able to give a valuable collection of plants to the Aberdeen University—an early indication of the public spirit which afterwards marked his life. In 1881, he came to King William's Town, the first of five brothers to make their home in this country. His services to this town during that period have laid us all under a debt, for I think that, with the exception of one other, nobody has given so long a public service. From 1898 to 1922 he served on the Town Council, and when we remember that it was during these years that those schemes were undertaken and carried through which gave to the town its pleasant character to-day, we may be able to estimate and to acknowledge in some measure the value of his long service, a service already acknowledged by his brother councillors in naming Leightonville after him. In 1910 and 1911 he was Mayor of the town. His term of office saw the death of King Edward, the jubilee of the borough and the coronation of the present King."

We extend to Mrs. Leighton and family our deepest sympathy in their sudden bereavement.

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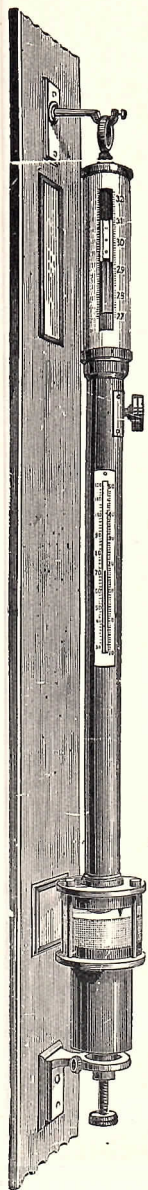
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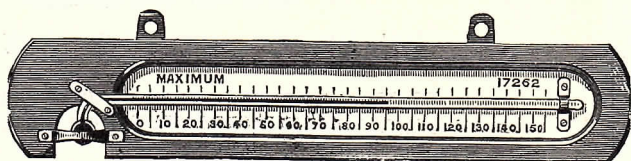
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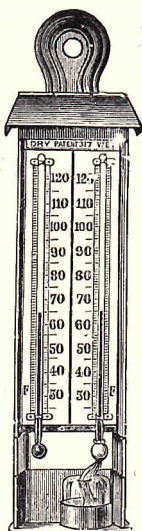
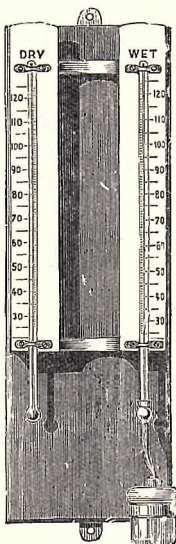


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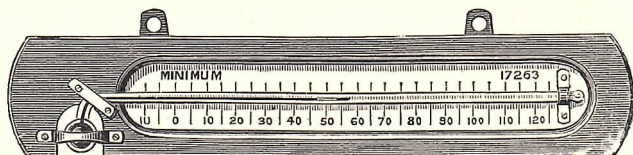
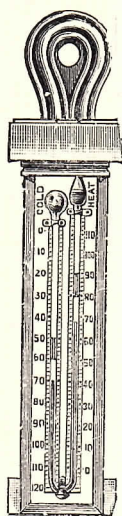
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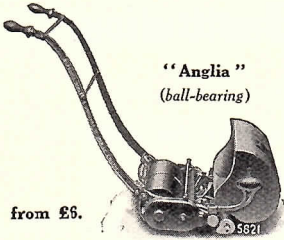
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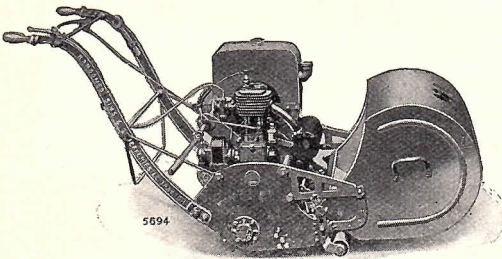
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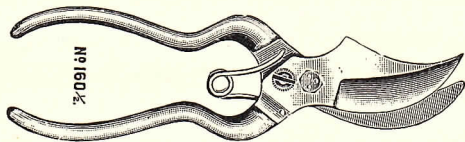
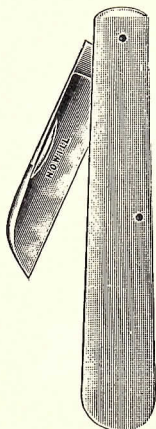


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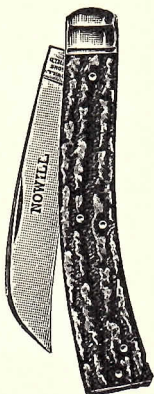
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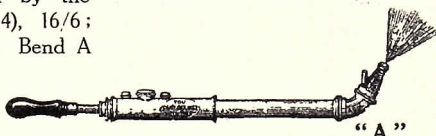


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IMPORTANT NOTICE.

The Annual General Meeting of the Guild, followed by the **Annual Dinner**, will take place (circumstances permitting) on **Thursday, May 22nd, 1930 at 6-30 p.m.** at the **Clarendon Restaurant, Hammersmith, London, W.**

It is hoped that Mr. F. S. Sillitoe, M.B.E. (of Sudan) will preside on this occasion. Mr. Sillitoe has accepted the Committee's invitation to be nominated as President of the Guild for 1930-31.

Dinner will be served at 7-30 p.m. and tickets are available from the Secretary at 7/- each (exclusive of wines).

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