



THE  
JOURNAL  
OF THE  
KEW GUILD

AN ASSOCIATION OF  
MEMBERS OF THE KEW STAFF  
PAST AND PRESENT

1944 (Published 1945)

LIST OF OFFICERS.

*President* : 1943-44 :—J. W. Besant, A.H.R.H.S.  
          "          1944-45 :—Miss E. M. Wakefield, M.A., F.L.S.  
*Trustees* : E. J. Salisbury, C.B.E., D.Sc., F.R.S., and  
              W. M. Campbell, N.D.H.

*Hon. Treasurer* : L. Stenning, Royal Botanic Gardens,  
                  197, Kew Road, Kew, Surrey.  
(To whom all remittances should be addressed.)

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  House, Kew, Surrey.

*Assistant Editor* : H. S. Marshall, Herbarium, Royal Botanic  
  Gardens, Kew.

*Members of Committee :*

Retire 1945

F. N. Howes, Kew  
B. P. Mansfield, New Zealand  
H. Welsh, Hampstead  
T. H. Everett, New York

Retire 1946

E. G. Dunk, Kew  
F. G. Preston, Cambridge  
E. Coward, Richmond  
P. Robertshaw, Natal

*Foremen and Student Gardeners .*

J. SOUSTER

Retire 1947

Miss E. M. Wakefield, Kew  
F. S. Sillitoe, Kew  
T. R. N. Lothian, Australia  
F. G. A. Goldsack, E. Sheen  
A. J. Brooks, Putney

Retire 1948

M. Free, U.S.A.  
S. Pearce, Kew  
F. H. Eul, Bexley Heath  
T. Sargeant, Ripley  
W. H. Barker, Liverpool

*Women Gardeners :*

MISS V. PAINE

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## EDITORIAL.

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The present number of the *Journal* is slightly smaller than the last two which have appeared. This has been rendered necessary by the exceptionally high cost of publication. The reduction has been effected in the amount of text provided and not in the number of illustrations, as it is known that good photographs are especially appreciated.

As in previous years the Committee are much indebted to Mr. Gerald Atkinson for improving some of the photographs and otherwise helping to show them to the best advantage.

A special feature of this number is the geographically classified list of members. The object of publishing such a list (which was suggested by Mr. C. R. Stock) is to indicate to members at a glance those fellow Kewites who reside in their vicinity. As long as the present high cost of publication continues it has been suggested by the Committee that the list of past Kewites with full addresses and the classified list without addresses might be published alternate years. This would somewhat reduce the very heavy expense (about £30) of publishing the full address list every year.

It is regretted that the Accounts for the year 1944 were not received in time for publication.

## MISS ELSIE M. WAKEFIELD, M.A., F.L.S.

In order to recognise the part played by women at Kew during the war-period the Committee of the Guild suggested that it would be appropriate to elect a woman President. It was the turn for a present Kewite. As the senior lady member of the Kew staff and as being known to a very large number of members of the Guild Miss E. M. Wakefield's name was put forward by the Committee and was unanimously elected at the Annual Meeting.

Miss Wakefield inherited the instincts and interests of a naturalist from her father, Mr. H. Rowland Wakefield, who for many years was science demonstrator to all the elementary schools in the Borough of Swansea. In the beautiful country of the Gower Peninsula, near her home, Miss Wakefield collected flowers, birds, shells, butterflies and beetles. Later she turned definitely to plants and took the honours certificate of the Central Welsh Board in botany and chemistry and gained an exhibition at Somerville College, Oxford. She attributes her first interest in fungi, a group in which she is now a recognised authority, to the brilliant colouring of some of the toadstools (especially species of *Hygrophorus*) and to the fact that she was fond of drawing and painting. At Oxford she took a first-class honours degree in botany and in her fourth year studied forest pathology. This led to her being awarded a Gilchrist Fellowship and by means of this she went to München to study at the Forestry and Botanical Institute under Prof. von Tubeuf. From there she published a paper in German dealing with the conditions determining the production of fruit bodies in the *Hymenomycetes*.

Shortly after her return to England in 1909 Miss Wakefield was offered a post as Assistant in the Herbarium at Kew under Mr. George Masee, who was in charge of the Cryptogamic Department. After she had been through the mill (labelling, "laying in" and other routine duties to which all newcomers at the Herbarium gladly submit) she was entrusted with naming and at the suggestion of Mr. Masee began to specialise on the Lower Basidiomycetes. These fungi and especially the *Thelephoraceae* still remain one of her favourite groups and on this and other mycological subjects she has published many papers.

In 1915 when there were several changes in the Herbarium, owing to the disease work being transferred to the Pathological Laboratory and to Mr. Masee's retirement, Miss Wakefield was left in sole charge of the lower Cryptogams and thus for some years was responsible also for the naming of Lichens and Algae.

In 1920 she was offered the Mary Ewart Travelling Scholarship from Somerville College and through the influence of Sir David Prain she was seconded for six months to the Department of Agriculture for the West Indies, where she acted as temporary mycologist. In this capacity she visited the islands of the Lesser Antilles, Barbadoes and Trinidad, and was able to obtain a first-hand knowledge of tropical fungi. After



leaving Barbadoes she spent two months in the United States and Canada, visiting botanical institutes and making valuable mycological contacts.

The third and fourth decades of the present century witnessed great developments at Kew as a scientific institution and especially in the Herbarium, and the pressure of work due to vast collections coming in especially from Universities, Government Herbaria, Departments of Agriculture and Forestry in various parts of the Empire was felt in the Cryptogamic as well as in the Phanerogamic Department. In addition to the naming of these collections and to the publishing of floristic work Miss Wakefield contributed papers on pathology, mycological ecology and biology.

Our present President has always been one of the most active supporters of the British Mycological Society, regularly attending the spring and summer "forays" and all the indoor winter meetings. She was Secretary of the Society for 17 years (1919-1936) and was President in 1929. She has served on most of its committees, notably on the Mycological Nomenclature Committee where her great knowledge of literature has been invaluable. She has, moreover, been concerned with the training of many men in tropical mycology, both University graduates and Kew men going abroad, who, especially before the establishment of the Imperial College of Tropical Agriculture, Trinidad, came to Kew for instruction on this subject.

Throughout her long term of service in the Herbarium Miss Wakefield has had, chiefly owing to her knowledge of and interest in plant diseases, many links with the Gardens and has often given lectures to the Mutual Improvement Society. During the war period the official allotments have forged further links, as have also her demonstrations to the garden staff on First Aid. She has had two terms of service on the Guild Committee and has been a regular attendant at the Dinners.

A.D.C.

## SIR DAVID PRAIN, Kt., C.M.G., F.R.S.

Many obituary notices have appeared in botanical and other journals on the distinguished botanist and former Director of Kew, Sir David Prain, and any member of the Guild desiring particulars of his career can consult these notices in the Kew Library. Owing to the demands on space it is felt that a detailed account need not be repeated here, especially as it is now nearly a quarter of a century since Sir David left Kew and consequently was not known personally to any of the younger generation. A short note and a personal appreciation must therefore suffice.

To many of the staff the introduction to Col. Prain, as he then was, took place in the Curator's Office Yard on a chilly December morning in 1905, shortly before Sir William Thiselton-Dyer handed over the reins to his successor, when a group-photograph was taken. Copies of this photograph are hung in the Curator's Office, Director's Office and in the Herbarium, and it was reproduced in the *Kew Guild Journal* for 1908.

Dr. David Prain came to Kew from India where he had been in the Army Medical Service for 20 years, but had been seconded for 17 of them as part of the administrative staff of the Royal Botanic Gardens, Calcutta. After holding the post of Curator of the Herbarium and Library of the Gardens at Calcutta for 11 years, he was appointed in 1908 Superintendent of the Gardens and at the same time Director of the Botanical Survey of India. He retired from India with the military rank of Lt.-Col. He was 48 when he came to Kew.

Sir David knew the art of delegating his duties, which accounted for his not being such a familiar figure in the Gardens at Kew as was his predecessor. From the scientific standpoint he was a systematic botanist of outstanding ability and a most careful and accurate worker. He never spared himself with regard to his administrative responsibilities and continued, throughout all his time at Kew, to work hard on his botanical research, which consisted chiefly of taxonomic revisions.

It was when the little Laboratory for plant pathology was set up on Kew Green in 1915 that the present writer came to know Sir David well. Whenever duties permitted he insisted on a daily visit to the Director's Office and it was on these occasions that one came to realise his wide reading and scholarship, his insistence on accuracy and strict sense of duty, and withal his kindly nature. He taught us many lessons. If a memorandum were undated he would hand it back with a twinkle: "Not quite finished, is it?" or, if a plant-name derived from the Greek were misspelt he would make one look up the derivation in "Liddell and Scott" which stood on his bookshelf.

Whilst he was Director of Kew Sir David played a prominent part in the botanical world, serving as president of several scientific societies and as chairman of numberless committees. He was knighted

in 1912. One of his more important duties was to act as President of the Imperial Botanical Conference, the various sections of which held a week of important meetings in London in 1924. He is gratefully remembered by the Herbarium scientific staff for his persistent and at length successful efforts in having the salaries raised and made equivalent to those of the Herbarium staff of the Natural History Museum at that time.

Sir David retired from Kew in 1922, just before his 65th birthday. After retirement he kept on his committee work and other duties and was always in great request as a chairman of meetings and as a sympathetic and wise counsellor to the learned societies.

In his later years he became deaf but retained his remarkable memory and all his mental faculties to the end. He died at his residence, The Well Farm, Warlingham, on March 16, 1944, aged 87 years. Lady Prain predeceased him in July, 1942. A.D.C.

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## ANNUAL GENERAL MEETING 1944.

The Annual General Meeting was held in the Lecture Room at Kew on July 29, at 3 p.m. Owing to the unavoidable absence of the President, Mr. J. W. Besant, through ill-health, the Chair was occupied by the Curator, Mr. W. M. Campbell.

The Meeting was a small one owing to the difficulty of travel and only 18 members signed the attendance roll.

On the motion of the Chairman all members stood whilst the names of the twelve members of the Guild who had died during the year were read. After the formal business was transacted, including the report of the Committee and the Accounts, the Officers and the Committee were elected as follows:—

President	...	...	Miss E. M. Wakefield
Hon. Treasurer		...	Mr. L. Stenning
Secretary and Editor	...		Mr. A. D. Cotton
Assistant Secretary and Assistant Editor	...		Mr. H. S. Marshall

The nominations for the new Committee were elected as follows:—

Mr. M. Free	to succeed	Mr. Judd
Mr. S. Pearce	„	„ Mr. Osborn
Mr. T. Sergeant	„	„ Mr. Lavender
Mr. F. H. Eul	„	„ Mr. Stock
Mr. W. H. Barker	„	„ Mr. Lawrence

## PRISONERS OF WAR FUND.

The Treasurer announced that as it had been impossible to send assistance on any material scale to the Prisoners of War, the Committee had agreed that £30 should be sent to the Red Cross. The balance of the fund after this amount had been sent was £28 0s. 11d.

## JUBILEE PERMANENT SECURITY FUND.

The response to this appeal had been satisfactory especially from members resident in the country. Up to the date of the Meeting comparatively few communications had been received from members living abroad. The fund stood at £255 5s. 7d.

## KEW TRAINING.

Mr. Coward raised the question of the future training of Kew men and after a short discussion in which Messrs. MacCartney, Eul and Osborn took part, it was agreed to form a small sub-committee consisting of Messrs. Sillitoe, Brooks, Middleton, Lawrence and Coward, to look into the matter and to supply information to the Director should he desire help from the Guild.

At the conclusion the Chairman referred to methods of improving the Guild and pointed out that a classified list of addresses on a geographical basis would be a feature of the next Journal. Any

further suggestions with a view to improving the usefulness of the Guild would be welcomed.

No after-Meeting and Tea was held on this occasion as it was felt by the Committee that, in view of the appeal by the Government to refrain from unnecessary travel, Kew, as a Government institution, should not hold a social function which to many members might be an incentive to travel.

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## MEMBERS OF KEW GUILD SERVING IN H.M. FORCES.

The following names are additional to the full list which was given in the *Journal* for 1943, p. 239 :—

A. S. Elson, R.A.F.  
 R. Findlay, Royal Engineers.  
 F. E. Hazelwood, Australian Army.  
 L. C. Hendon, Royal Army Ordnance Corps.  
 †H. F. Mayne, Canadian Highlanders.  
 W. Porter, R.C.M.P.  
 †P. E. Thyer, South African Forces.  
 A. S. Wilson, Indian Forces.

## PERSONAL.

We greatly regret to record that news has been received during 1944 that the following six Kew men have been killed in action :

G. C. Last, M.M., of Port Elizabeth, S. Africa.  
 J. G. Mayne of the Ontario Agricultural College, Guelph.  
 E. H. Robson of Parks Department, Coventry.  
 F. G. Selby, Foreman in the Decorative Department.  
 J. W. Sutch, Gardens Boy.  
 P. E. Thyer of Pretoria, S. Africa.

Obituary notices of these young men, with the exception of Capt. E. H. Robson, will be found at the end of this Number.

Gunner Roy Hudson is our first P.O.W. to return to England. The story of his ordeals and his rescue from a raft after being torpedoed is told on p. 365.

Private Gordon Henry Spare 6070 has been transferred from a Malaya Camp to a Borneo Camp. This we learned from the British Red Cross Society and it was confirmed later by a letter from the Colonial Office.

Mr. J. S. L. Gilmour's work for the Ministry of Fuel and Power terminated in December, 1944, and he resumes his duties as Assistant Director on January 1, 1945.

Dr. R. W. G. Dennis, B.Sc., Ph.D. was appointed to the Herbarium staff as Mycologist on October 1, 1944. Dr. Dennis is a graduate of Bristol University. After leaving Bristol he was appointed Assistant Plant Pathologist to the West of Scotland Agricultural College, Glasgow, where he remained for five years.

From Glasgow he went to the Potato Virus Research Station, Cambridge and held a position as Chief Assistant for  $2\frac{1}{2}$  years. He came to Kew from the Seed Testing Station, Corstorphine, near Edinburgh where he had been Pathologist for six years.

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Mr. K. N. Kaul, M.Sc., of Lucknow University who has been Botanist for India in the Herbarium since July, 1939, returned to India with his wife and family in October, 1944.

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F. J. Ford who is in the R.A.F. has had  $2\frac{1}{2}$  years in the American Continent. He has been serving as an instructor in various parts of Canada and has also seen service in Alaska at the extreme north-west of the Continent and within the Arctic Circle.

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Mr. P. B. Mansfield of the Forestry Unit of the 2nd N.Z.E.F. after service in North Africa, Italy, Egypt and Palestine, passed through London on his way home to New Zealand in December, 1944, and called at Kew.

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Major F. R. Long retired from his post as Superintendent of Parks, Port Elizabeth, South Africa, in October, 1944, having reached the age limit (60 years). He hopes to set up as a Consulting Landscape Architect when he is demobilised.

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Mr. F. J. Cook who has been Assistant Superintendent of Parks and Town Attractions at Port Elizabeth for four years has now been appointed Superintendent in succession to Major Long.

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We greatly regret to record the death of Mr. W. H. Johns, N.D.H., on November 20, 1944. Mr. Johns was elected President of the Institute of Parks Administration for the year 1943-44, and a note of congratulation had been penned for publication in this column. (Obituary p. 404.)

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Mr. Herman Spooner retired from the Imperial Institute on July 4, 1943, having reached the age of 65. He left Kew in 1901 and was appointed Curator of the exhibition galleries of the Institute in 1920. During his period of office as Curator the numerous dioramas which now form a feature of the galleries and the educational "Story Exhibits" of Empire products were installed.

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M. Lucien de Wolf of Belgium who came to Kew as an exchange Student Gardener in 1937 and stayed two years, is now Curator of the Botanic Garden at Brussels.

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Mr. J. S. Christie, A.H.R.H.S., who has for so many years occupied the position of Superintendent of the Parks to the Metropolitan Borough of Camberwell, has recently retired. His present address is 55, Market Street, Carlisle, Lanarkshire.

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Kewites will be pleased to learn that the George D. Pratt Medal has been awarded to Mr. T. H. Everett, of the New York Botanical Garden, by the Horticultural Society of New York, in recognition of his success as a professional gardener. (*Gardener's Chronicle*, March 18, 1944, p. 116.)

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Mr. James Robbie, Inspector of Horticulture and Agriculture, Forest Department, Sudan, gave a broadcast talk from Khartoum on September 7, 1943. His subject was horticultural difficulties in the Sudan and he dealt largely with problems of water, drainage, and soil. He has kindly sent us a copy of the Talk, but we regret that space does not permit of its being printed.

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Mr. R. W. Younger has left Wisley and is now Instructor in Gardening under the Canterbury Education Committee at the Technical Institute, Canterbury.

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We extend congratulations to Mr. R. O. Williams, O.B.E., Deputy Director of Agriculture in Trinidad on his appointment as Director of Agriculture, Zanzibar. Mr. Williams is one of the few Kew men to become a Director of Agriculture.

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Dr. R. A. Dyer has been appointed Chief, Division of Botany and Plant Pathology in the Union Department of Agriculture for South Africa. His headquarters are at Pretoria. Dr. Dyer was Assistant for South Africa in the Herbarium at Kew from 1930-1934.

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Miss Inez C. Verdoorn who was Assistant for Africa in the Herbarium from December, 1925, to March, 1928, has been appointed Senior Botanist at the National Herbarium, Pretoria, in succession to Dr. R. A. Dyer.

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Mr. Thomas Sargeant who left Kew in 1912 and for the last 14 years has been with Messrs. James Carter of Raynes Park, has recently become a Director of the firm of Messrs. J. R. Jackman, Ltd., Woking Nurseries, Woking, Surrey.

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Mr. P. Trevaskis who left Kew in 1927 has been appointed Curator of the Park and Gardens at Brighton, Victoria, Australia.

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Mr. F. P. Knight who recently held a position as Senior Horticultural Officer in the Camouflage Department of the Ministry of Home Security, has taken up the appointment of General Manager to the old and much respected firm of Messrs. R. C. Notcutt, The Nursery, Woodbridge, Suffolk. Mr. Knight was formerly propagator in the Arboretum at Kew and left in July, 1929.

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Mr. F. J. Jollie has been appointed Senior Lecturer in Horticulture at the Massey Agricultural College (N.Z. University), at Palmerston North, New Zealand.

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Mr. B. W. Harborne has recently joined the firm of James Carter & Co., Raynes Park. After leaving Kew in 1923, Mr. Harborne went to Wembley where he helped to lay out the garden for the Exhibition, and since then he has been associated with many important firms.

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Mr. Frank H. Eul, N.D.H., D.I.P.A., formerly Superintendent of Parks, Nelson, Lancashire, has been appointed Superintendent of Parks, Bexley Heath, Surrey.

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Mr. K. E. Toms was appointed to the Department of Agriculture in Nigeria as an Inspector of Produce in 1942. He was formerly, for eight years, Agricultural and Forestry Officer in St. Helena, and previous to that saw service at Amani, Tanganyika Territory.

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Mr. Arthur J. Brown, A.Inst.P.A., for thirteen years with the Hull Parks Department, and previously at Kew and Penrhyn, has been appointed Superintendent of Parks and Cemeteries to the Wigston (Leicestershire) Urban District Council.

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Mr. Noel Lothian has been appointed Lecturer in Horticulture at the Lincoln Agricultural College, Lincoln, Canterbury, New Zealand.

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Miss M. Lancaster left the Ministry of Agriculture and Fisheries at the end of 1944 to take up work under the Wiltshire Board of Education as a Teacher of Gardening and Rural Science. She has been appointed to the Southbroom Senior School, Devizes.

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Mrs. Cooper who was one of the first woman gardeners to come to Kew in 1940 and has been Forewoman in charge of the Rock Garden since 1942 left Kew in August, 1944. She is now exercising her talents as a connoisseur of art treasures.

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Miss N. Shallcross left Kew in March, 1944 and accepted a post as gardening instructress in a school under the Essex Education Committee.

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Miss M. J. Speake left Kew in March, 1944 having been appointed Demonstrator and Lecturer to the Manchester Agricultural Committee.

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Miss Brenda Watts left Kew in March to take up the appointment of Demonstrator at Dig for Victory Shows under the Ministry of Agriculture and Fisheries. Her headquarters are in London but her work involves a considerable amount of travelling to attend Shows in different parts of the country.

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Mr. J. Troll left Kew in June, 1944 and took up a post as Horticultural Instructor to the Wimbledon Education Committee. He is engaged in teaching horticulture to boys in the senior schools in the district.

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Mr. G. B. Brown who came to Kew in January, 1942 left in July, 1944 to take up a position under the Blackpool Public Parks.

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Mr. E. F. Bundy left Kew in July, 1944 and accepted a post as Assistant Park Superintendent, Richmond, Surrey.

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Mr. D. Dawson left Kew in July, 1944 to take a position in the Parks Department at Cardiff. Mr. Dawson was formerly at Wisley and had been at Kew nearly 3 years.

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Miss F. Sharps, N.D.H., formerly of Reading, left Kew in July, 1944 to take up a position in charge of the practical work connected with the Empire Potato Collection grown at the Imperial Bureau of Plant Breeding and Genetics at Cambridge.

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Miss I. E. Bolton who had been in the Gardens since May, 1942 left Kew in October, 1944.

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Mr. E. C. Lyne who came to Kew in September, 1943 left in December, 1944 to take up a position in a Landscape Garden Nursery at Bournemouth.

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Miss Phyllis Cornwell, N.D.H., who had been Demonstrator on the Model Allotment Plot for two years left Kew at the end of 1944 to take up the post of Assistant County Adviser for Derbyshire. Her headquarters are at the County Agricultural Institute, Derby.

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## NOTES AND GLEANINGS.

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A letter from Monsieur Gagnepain, formerly of the Natural History Museum, Paris, informs us that at the great new Herbarium at Paris "there are no ruins to deplore, though bombs have fallen very near. For the sake of prudence the collections had been sent far away and they have now been returned without having suffered at all."

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From the pages of the *Gardeners' Chronicle* we first learned that the old Botanic Garden at Brussels, near the Gare du Nord, has not suffered unduly during the war and that the Director of the Garden, Dr. Walter Robyns, who has often visited Kew, (though he is not an old Kewite as the writer of the article indicated) is well and active. The removal to the new Botanic Gardens in the grounds of the Domaine Royale de Bouchont, preparations for which were well in hand before the war, has been delayed but it is hoped that before long it will be possible to carry out the full programme.

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The following notes by two non-Kewites will be read with interest.

"In Palermo, Sicily, the world-famous Botanic Garden was in a deplorable state. Much bombed and almost denuded of labour, it presented that inexpressibly sad appearance that always characterises a neglected garden. The great collection of trees was still largely intact, but the Natural Order beds and the well set-out collection of economic plants, perhaps the finest in the Middle East, were almost completely overgrown."

(Roy Hay in *The Gardeners' Chronicle*, June 3, 1944.)

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"The Herbarium (at Catania, Sicily) was the most pleasant that I had ever seen. There were armchairs, books, radio, a library, and best of all, a most friendly and homely atmosphere. Tea and cakes were pressed on me by a charming hostess and as I rested from my wanderings I felt that here at last was the ideal—gardening and good-will, horticulture and hospitality combined. I felt that Kew might copy this example and perhaps even Edinburgh. . . . The only trouble about the Herbarium was that it was completely devoid of specimens for I almost forgot to tell you that it had been taken over by the Y.W.C.A. as a Services club!"

(Capt. E. Johnson, M.C., in *Journ. R.H.S. Gardens Club*, vol. 36, 1943.)

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Readers of the *Journal* may be interested to know that the British Mycological Society has recently published a very useful booklet entitled "A list of Common British Plant Diseases". The list is alphabetically arranged under host plants and includes in addition to the ordinary agricultural and horticultural crops, greenhouse plants, trees, grasses and the mushroom. It should be emphasised that it is a list and without text, but the list includes the Latin name of the parasite (and principal synonyms) and the name of the disease which the parasite brings about. As appendices there is a list of authors' names with their abbreviations, and an index of foreign popular names. The booklet which is bound in firm covers consists of 60 pages and can be obtained from the Cambridge University Press, Bentley House, London, price 5/- net.

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"SITUATION VACANT."

Essential Qualifications :

Ability to produce finest vegetables and flowers : also succulent pigs (*sic*), tender chickens, plump ducks and fat geese.

Capacity to organise and beautify gardens and grounds of seventy acres, and to manage Kikuyu labour. A serene and cheerful disposition.

Other useful Qualifications :

Knowledge of horses, fish-culture, big game, trees and landscape gardening.

The post will be vacant on the 1st August : salary according to experience and ability."

(A cutting from an East African newspaper, sent by a correspondent.)

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EXTRACTS FROM LETTERS.

The following news has been received as to Gordon Spare :—

"Thank you for your enquiry about my son, Gordon. He and his family were in Australia when the Japs broke through into Kedah in 1941, as the estate he was managing, Inchong, is there. He was on his way back with them to take over another estate in Perak and had reached Adelaide. He at once sent them back to Sydney, where they still are, and then went on by himself to Perth to await a boat to Singapore. After some delay he got one and he landed at Singapore about 10 days before the capitulation (February 15, 1942). He cabled his wife to say he had joined up with the

Singapore Volunteers, and until I received a card from him, with the usual stereotyped phrases in July, 1943 (one and a-half years later), we had no knowledge whether he was alive or not. . . . They have two children, a girl aged 5 and a boy nearly 3. . . . My youngest son went through Dunkirk and is now in Italy. If I have further news about Gordon I will let you know."

(From Mr. H. Spare, 63, Sandy Lane South, Wallington, Surrey.)

Though not a Kewite, readers are always glad to hear news of "K.W." In a letter recently received he writes:—

"I have been almost a year with the R.A.F. in western India except for a trip to Assam in March to collect some tribesmen. The work is interesting, but I want to be back on the frontier. I don't even get any flying with my fighter pilot friends here as I did in Poona. In fact it is all rather tame except for a bad car accident I had last November, which resulted in breaking a bone in my neck (which nearly finished me) and has left a permanent but not crippling injury to my shoulder."

(From F. Kingdon-Ward, R.A.F., Indian Command, c/o Grindlays, Calcutta, May 20, 1944.)

"It is now 48 years since I left Kew to fulfil an appointment at the Botanic Gardens, Natal, where I found much to interest me, in the way of trees, shrubs and climbers in great variety. The population at that time was approximately 20,000, now it has increased to more than 400,000, I believe. Oil lamps were in use for street lighting then. . . . During the last war I was in the Royal Flying Corps as a gunner with the Egyptian Expeditionary Force. I never thought I should live to see another."

(From William Thorpe, Sutton Coldfield, Warwickshire.  
Sept. 20, 1944.)

"Mr. Besant's election as President of the Guild gives me singular pleasure. We were at Kew together more than 40 years ago. Very sorry to hear of Dave's death. He and I were in "digs" together in Bushwood Road, Kew, for a short while. Harwood, too, was another Kewite of my day. . . .

"Recently, when attending the annual conference of the Institute of Parks Administration of South Africa, held at Pretoria, in the capacity of City Councillor delegate from Pietermaritzburg, I had the pleasure of meeting several South African Kewites attending the conference. They were:—Long (Pretoria), Thorns (Kirstenbosch), Bruins-Lich (Pretoria), van Balen (Johannesburg) van den Houten (Capetown), Cook (Port Elizabeth), Baker (Bloemfontein), Gunn (Randfontein), Dr. Dyer (Pretoria) and Everitt (Queenstown)."

(From W. J. Newberry, Pietermaritzburg, Natal, South Africa,  
Nov. 21, 1944.)

" I am enclosing copies of 5 papers read at the conference of ' The Institute of Parks Administration (South Africa).' . . . They formed part of a symposium on ' Horticultural Education in South Africa.' The Minister for Labour (Mr. Madeley) was in the chair, and it was a most successful conference. . . . The main idea at the back of all was to persuade the Government to inaugurate a Central Training College with trial experimental grounds and a botanical garden where horticulturists may be taken on as student-gardeners much as is done at Kew. . . . "

(From Major F. R. Long, Pretoria, S. Africa, Dec. 6, 1944.)

" I have had an interesting time and some exciting moments since I last wrote. At five in the morning exactly a year ago to-day I got wounded, with a bit of shrapnel that cut the back of my leg just above the ankle. . . . After a very pleasant sojourn near Algiers, in a Convalescent Depot, and sampling many hospitals on the way there, I was turned out fit. It took a long time to heal, but when I did I was able to have a swim in the ' Med ' each day. I rejoined this unit three months ago, and get only the slightest trouble from my leg. . . . I saw quite a bit of Italy, and very much appreciated its scenery, especially as we got further north. On my way back from N. Africa I had a six days' leave at Torre Annunziata, and visited Naples, Castellamare and Pompeii, both ancient and modern. Florence was the most interesting place. The Palace Pitti there has what I suppose is a typically medieval Italian garden. Wide paths, lined by 15ft. Portugal laurel hedges, through rough woodland, with vistas, one down to the Palace, and the other into the valley of the Arno. As in the town itself there is plenty of statuary around."

(From Pte. J. Boyle, 1 Pl., H.Q. Co., 5 R.W.K., C.M.F.  
Dec. 28, 1944.)

" I was very sorry to leave Bermuda with its fine surroundings, very charming people and the agreeable climate.

" The journey from Bermuda was quite an exciting event. I travelled from Bermuda to Baltimore, U.S.A., by air. This was followed by a 24-hour train journey from Washington to Miami where I stayed for a fortnight waiting for a 'plane which took me on to Caracas, Venezuela. I spent four days in Caracas waiting for another 'plane bound for Trinidad. In Trinidad I spent a very interesting two weeks with Dean (an old Kewite), who is Curator of the Botanic Garden there. I left Trinidad on March 10, again by air and arrived in this Colony, having completed a very interesting and exciting journey.

" The Botanic Garden here covers an area of about 90 acres and is quite well laid out, but the number of species grown for a garden of this size is not large. There is, however, an excellent collection of palms which appear to do very well. The soil is composed of very heavy clay, in fact it is the most difficult soil to work I have

ever experienced. Drainage is very poor mainly because this part of British Guiana is about 4ft. below sea level. During the wet seasons much of the land is under water for several months at a time. In fact some of the coastal areas present a very depressing spectacle when one can see nothing but hundreds of acres of water with the vegetation just appearing and small dilapidated houses marooned. It is not unusual to see pigs and cattle swimming to find their food. Under these conditions many plants will not succeed, but of course plants like *Victoria regia*, *Nelumbium* sp. and other aquatics are especially happy. In the dry season the soil becomes so dry that unless the land can be irrigated only the deep-rooted plants survive. In a climate with such extremes of wet and dry, gardening becomes very difficult and presents many interesting problems. In addition to the Botanic Garden I have to manage a large fruit nursery where we are planning to propagate within the next 12 months about 10,000 budded citrus plants and a similar number of mangoes and avocado pears. I have also to visit other areas of the colony to give advice and inspect district experimental stations. There is, furthermore, a fairly large herbarium. The fact that I have to look after this makes me wish that I had spent more time in the Herbarium at Kew. That will be one of the things I shall have to look into when I get some leave in England."

(From Gordon R. Groves, Botanic Garden, Georgetown, British Guiana, Oct. 14, 1943.)

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"It is surprising what short memories some men have, and they soon forget what they owe to Kew. I myself have ever before me (I left Kew 53 years ago) the many and varied advantages I owe to Kew, its associations, pleasant memories and much valued friendships, and an interest in the higher and more interesting part of our profession which I have never lost in spite of the commercial and money-making branch into which circumstances seemed to have pitched me. However, it has some advantages, one of which is to give you my assurance that it is a pleasure to help with regard to the publishing of the *Journal*."

(From George Lamb, Hextable, Nov. 17, 1944.)

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"I am now serving with the R.C.A.F. down in Nova Scotia at an operational training unit, and on a '48' a fortnight ago I managed a trip to Bermuda, being diverted there due to bad weather. You may be interested to know that Donald P. Watson, who left Kew in 1937 to take a teaching post in Long Island, N.Y., is in Bermuda. He is serving as a sergeant in the A.A.A.F. at the American Air Base on Bermuda."

(From L. Laking, R.C.A.F., Nova Scotia.)

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## KEW AS A LANDSCAPE.

By Richard Sudell, F.I.L.A.

Magnolias were in full bloom, the sky its deepest blue, with white, fleecy clouds moving gently across. Kew was the Kew that we all like to remember, the Kew of Youth and Happiness and Colour and Leisure. In front of the magnolias an exultant chuckling baby was being tucked into his pram by his mother, while a young airman, looking equally triumphant, tucked his camera back in his pocket, saying as he did so "That one I took of you two should be good—magnolias, and sky in the background. It ought to be a picture".

This little scene is typical of Kew. Kew is many things, and perhaps the most outstanding of all is that it has become a Treasury of Happy Moments for Londoners, and for thousands of visitors from all parts of the globe. "Come to Kew in lilac time" strikes a chord in many a heart.

You will say "What has this to do with the landscape architecture of Kew?" I think it has a great deal to do with it, for the end of all good design, domestic or landscape architecture, lies in its function and practical use. If Kew were less a place of happy memories and domestic pictures, it would have failed in what I claim it to be, one of the best examples we have of British Garden Design.

The question I am always asking myself is how was it that Kew evolved as good landscape at all, when its main expansion took place during the industrial revolution, an age of landscape destruction? There are of course many reasons. Kew was, until the Brentford Gasworks developed, far from the vortex of industry. Again, it inherited traditions of the eighteenth century, a time when many of our most famous landscape estates were planted and developed. A study of the vicissitudes which the Gardens and those who cared for them have undergone shows that Kew has become what it is today in spite of circumstances, and certainly not through the development of one master plan, which we Landscape Architects so frequently claim to be essential.

Today, every Institution is reviewing its function in the post-war world. Every local authority and Government Department is concerned in the vital work of preparing town and country planning schemes. It is certainly worth while to examine now the contribution which Kew can make in shaping the landscape of the future. Kew is often studied as a botanical and horticultural centre, and as a distributing centre for commercial horticulture—distributing seeds, ideas, men and materials! It has never as far as I know been fully acclaimed for the growth of its landscape, yet it is perhaps one of the most interesting examples in the world. Its history is a cross section of the history of land-



scape through the past three centuries. As architectural students value Oxford as a beautiful old city within which can be found examples of nearly every distinguished architect's work, so can use be made of Kew by students of landscape gardening. Here, certainly, we can find the work of distinguished landscape architects and note how their ideas may have affected the final lay-out. In the history of the Gardens, we can find both mistakes and corrections. The effect of Time, always a troublesome factor to the landscape architect, can be studied in the Kew records better perhaps than in any other British garden.

Naturally I am not discussing the botanical and horticultural contribution that Kew makes to the scientific world. I am concerned only with its examples of landscape design, good or bad, but definitely good on the whole, in relation to present day needs.

Kew owes most of its design to artists of the 18th and 19th centuries. It is a little difficult to pick out in detail the influences of the many minds that influenced the layout of the Gardens, which, as is well known, did not always consist of the single demesne we see today, but were separate gardens that have from time to time been added to the original Botanic Garden and have gradually been incorporated into the whole. Hence perhaps the name Royal Botanic Gardens. The Kew lay out has in fact been a synthetic process covering two centuries.

That the style of Kew is so good can undoubtedly be accredited to the few who planned its early days. Delving into old records we find that there was much which might have discouraged a Garden Architect, both in the natural resources of the site, and in the legacy of inartistic treatment that had to be faced. With regard to natural resources, we may note that the ground was monotonously flat and the soil a poor sandy gravel. There were however beautiful stretches of river and of these the early planners made full use.

One could write at length explaining how difficulties have been overcome, but it must suffice to mention just a few. Soil difficulties are inevitable—a Botanic Garden must have plants from many different parts of the world and soil of the proper type must be provided if they are all to flourish. Soil was carted considerable distances to meet this need and at intervals since the original planting, large quantities of material have had to be acquired. Boundary problems have been met by tree planting. Every visitor to the Gardens carries away a memory of endless garden and sky, a feeling that here, in spite of its position inside Greater London, is a garden where towns and cities seem far removed. In a hundred and one places in the Gardens one can stand and stare and wonder if it is true that only a few trees separate one from a busy bus route.

Drainage and water supplies have now ceased to be the problems they undoubtedly were in the early stages of development. Finally, the terrific problem of a monotonously flat site has been so dealt with that few, if any, visitors ever comment on it or even notice it. This last problem has been in part solved by the formation of the lake: soil excavated from the lake site now forms the terrace in front of the Temperate House. As for the rock garden, which most Landscape Architects try to make on undulating ground, its creation from a perfectly flat site without any local rock, is a fine example of overcoming difficulties. At the same time there is no feeling of inharmony or patchiness. It is perhaps worth while remarking that the real reason for the success of the rock garden—both of the old and new portions—lies in the effort which has been made to follow Nature's broad principles, without slavishly imitating any particular scene. The original rock garden, made in 1882, was I believe, made on the style of a water-course, such as one sees in the Pyrenees, where water has worn a deep crack down a mountainside, and trees line the high edges of the ravine, while tree stumps and rocks form the sloping sides of the ravine.

Such a scheme, if not the only one for a flat site, is the one best fitted to produce the feeling that it is Nature's handiwork. The Kew rock garden is worth study by all garden makers.

Of the legacy of inartistic treatment, including a good many hideous buildings, much could be, and has been, written. We need say little of the buildings here, except to note that from time to time monstrosities such as the "Merlin's Cave" (which was apparently the kind of thing now erected as a side show at exhibitions) were gradually swept away by men of vision. Of the present buildings opinions may be divided; I think, however, it is true to say that none of them are definitely inharmonious, though some might place the Pagoda in this category. (But I, and all old Kew students, forgive the Pagoda, even if it is out of place. It is a symbol of great meaning to most of us.)

Whatever the merits or demerits of the design and general layout in the past, the present style, which we owe to the famous landscape architect, W. A. Nesfield, who worked at Kew just one hundred years ago, must be approved by all discerning critics. The spacious formal treatment of The Broad Walk for instance leaves little to be desired. True, Nesfield was also responsible for a good many intricate beds and narrow gravel paths, which were fashionable in his day, but these have gone the way of all disproportionate and undesirable parts of his design. Nesfield had a good deal of material on which to work, and styles from which to select, for he followed a number of planners who were each gifted with vision in some direction. "Capability Brown" for instance, whom many historians criticise for his destructive rather than constructive work, had previously contrived and

planted the "Hollow Walk" or, as we now call it, the "Rhododendron Dell." Bridgman, another follower of the "natural" school had introduced the Haha, and shown the value of vistas. But Nesfield was the first to be able to deal with the enlarged Kew Gardens which took in most of the area at present included, and it was Nesfield who conceived the grand treatment of the main walks and avenues which exist today.

These extensive and ample vistas are a very distinctive feature of the Kew design. If you visit the gardens in winter when few visitors are about, possibly the amplitude of these walks seems unnecessary, but when you see Kew on a fine Sunday or on a Bank Holiday, you realise at once that such bold wide walks are just what is needed.

This brings me once again to the comparison between the design of Kew and the design of any Briton's home garden. The principles are the same; first the utilities must be considered. At Kew there must be representative plants from all families, and of every appropriate species, so grouped that the botany student can conveniently compare them and study them. This is a utility question, yet strangely enough this utilitarian method of grouping has revealed uses of plant material to the landscape planter which have proved instructive and even exciting. Form and colour can be observed and planting material is available for choice as can be seen in no other garden, private, public or commercial. To cite but one example, the collection of rose species in the rose garden has encouraged many owners of private gardens to choose some of these on account of their artistic merits, in preference to the more fashionable hybrid roses of commerce.

The number of types of garden included in the Kew lay-out is another useful feature for students of Garden Design. Wide formal walks, grand vistas, winding paths through rocky ravines, grassy slopes set with daffodils, broad banks of fern and flower, quiet woodland walks—all included in one design, and forming part of a scheme that has to submit to very exacting requirements. The typical "British Garden" is of this mixed type. Not for us the unrelieved sombreness of evergreens as in some continental types nor an unbending adherence to formality. We know what we like, and we like in fact a little bit of everything. It is the Garden Architect's task to fit these bits into the whole design in an appropriate and pleasing manner. Surely Kew has succeeded in this.

One last point concerning general garden architecture. Kew, as already stated, has at various times been burdened with buildings, some frankly "impossible", and some good by themselves but not ideally situated. But, as with most gardens, Landscape Architects cannot destroy, move or remodel as they

wish. Once more there is much to be learnt from Kew, this time in the way a rather odd assortment of buildings has been absorbed, by good planting, into an artistic whole. Most of the non-living structures at Kew have a purpose. Almost every one is dignified by careful attention to its approaches, and so has become not only tolerable, but actually an important focal point.

Garden Architecture, in the future, seems likely to become more and more a civic responsibility. There will be few private gardens on any large scale, but many more public gardens. For students of Garden Architecture who concern themselves with public garden lay-out, the lessons of Kew are innumerable. Perhaps I may close with a reference to one not often realised. Kew has discovered that the public do not molest trees and grass and flowers, if they are handled sympathetically. There are no "Keep off the grass" notices at Kew. All continental visitors comment on this. Even Bank Holiday crowds treat Kew with the consideration that one gardener shows for another. Called on to explain this I should be inclined to pay tribute to one of Kew's former guardians, Sir William Thiselton-Dyer. He was responsible not so much for the general design of the Gardens, as for their perfection. Everywhere throughout the grounds small improvements were made under his direction, lawns levelled, paths streamlined—though he would not have used that word—tree planting and tree surgery perfected, and vistas improved. Is it not this very detailed perfection and care as to up-keep which unconsciously the public respects?

The four photographs accompanying this article are from my collection and illustrate Kew in some of her many moods.

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CONCERNING THE PRINCIPLES OF ARRANGEMENT AT  
THE ROYAL BOTANIC GARDENS, AND A CHALK GARDEN  
AT KEW.

By The Director.

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The arrangement of the outdoor plants at Kew, which is primarily on a taxonomic basis, has the great merit of enabling students unfamiliar with the gardens to find species themselves without undue loss of time. This basis of arrangement was doubtless adopted, in part for this reason, and in part because during the periods of rapid accretion of new introductions in the late nineteenth century places had to be found for many species of which the cultural requirements when grown in this country were unknown.

The great disadvantage of such an arrangement, orderly and logical though it be, and the defect is a serious one, is that the best cultural conditions cannot be assured when we assemble together plants which though they share many features in common, particularly in respect of their reproductive structures since this is the basis of our taxonomic systems, may nevertheless manifest the greatest diversity of environmental needs. It is in fact only in a comparatively small number of groups such as the desert-loving Cacti, the peat-loving Ericaceae or the epiphytic Orchidaceae that affinity and cultural requirements go hand in hand. Indeed the reverse is often very manifest, for on an English salt marsh we find that most of the closely allied species of Glasswort grow, not together in the same conditions, but each occupying the special zone where the conditions of growth are different. This is equally true of the dendroid Senecios of tropical mountains to take a very different example, whilst if we think of our British Dog Violets, which are sufficiently closely related that all were at one time regarded as mere varieties of a single species, one is to be found only on the sugar-limestone of Teesdale, some have their home on wet peaty fens, others on dry sands or heaths and still others are a feature of woodlands.

To meet this diversity of needs and yet to retain a taxonomic arrangement in our garden special treatment must be accorded to individual specimens by the provision of particular types of soil, varying degrees of drainage and of shade, etc. This is not merely wasteful of labour but obviously unsatisfactory also when we remember that, in nature, plants grow in communities and themselves share in the creation of the requisite environmental conditions.

The principle involved has been recognised at Kew already by the creation of the Rock Garden where thousands of species, belonging to many and the most diverse families, share and contribute to a common environment.

A further extension of this principle is now in process of construction, namely the development of a chalk garden in place of the unsightly Yucca collection that occupied the east side of the Ice-Well Mound. Here, taking advantage of the southern slope, a calcareous soil will be provided where chalk-down species and other calcicole herbs can be grown together which should permit of much more suitable conditions than could possibly be achieved under a purely taxonomic arrangement by repetitive soil amendments wherever calcicole species might recur in the diverse families and genera. It is hoped to establish here the more characteristic chalk-down species such as the Horse-shoe Vetch, the Wild Sanfoin, Squinancy-wort, *Astragalus danicus*, *Polygala calcarea*, *Phyteuma tenerum*, etc., with perhaps some of the less aggressive chalk grasses (e.g., Quaking Grass, *Avena pubescens*). When a carpet has been established one may hope that the rarer and less social species including the terrestrial orchids can be successfully introduced.

From the summit of the mound two out of the three Elms have been cut down. This would soon have been necessary for reasons of safety but their copious production of root suckers rendered removal of these

trees still more urgent. Their place will be taken by White Beams, Yews, Box, Wild Cherries, Spindle, Purging Buckthorn, Mezereon and Spurge Laurel, Old Man's Beard, and other such chalk scrub species, in order to provide an appropriate background and adequate shelter.

The entire community thus created should not only provide more natural conditions but itself be of scientific and educational value.

It is hoped that this venture may be followed by the provision for other specialised environments such as perhaps sand-dune, shingle and possibly salt marsh. The native constituents of the meadow community it is hoped to grow together in the glades of Queen's Cottage grounds thereby enhancing the beauty and value of this area whilst retaining its wild character.

The self-sown *Cistus* on the southern aspect of "Mount Pleasant" at the end of the Sion Vista suggests the possibility of assembling there some of the shrubs of the Mediterranean *Macchia*. Indeed the potentialities of such ecological gardening are great both from the scientific and aesthetic points of view. Their realisation is only limited by the large amount of careful thought requisite for their preparation and by the expenditure of money and labour that their accomplishment incurs. It may not be inappropriate to emphasise, for those who might wish to emulate the conception, that the creation of such "wild gardens" depends for artistic success upon "the art which conceals art" and though they can effect an economy in maintaining a higher standard of culture they do in fact involve more forethought and attention to detail in their care and maintenance than a similar area occupied by conventional cultivation.

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### IN A JAPANESE PRISONER-OF-WAR CAMP.

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I was a prisoner of war in Japanese hands for 2 years and 7 months having been taken prisoner at Singapore with many others on February 15, 1942. We were left out in the sun for two days and then rounded up and marched off nearly twenty miles to the great Prisoner-of-War Camp at Changi.

After that we spent three months in working camps in Singapore—clearing up the city and docks. This was the best part of our captivity because we were able to buy food with our own money and utilise our meagre Jap working pay.

By October, 1942, we were on our way to Thailand (Siam), a gruelling and back-breaking journey on the smallest of rations—rice was the basis of all meals and occasionally a vegetable stew. We were crammed into trucks, "red hot" by day and cold at night. Result, fever and dysentery. After five days we alighted at Bong-pong.

A stiff march through padi fields and jungle of 100 miles was completed in six days, again on very scanty rations. Exhaustion got the better of many men. Arriving at our particular point in the

jungle, we cleared it and built a camp from local wild material. With primitive tools we turned miles of jungle into a third-class road, in order to make contact with neighbouring camps and obtain supplies.

The main task had now to be tackled—the construction of a railroad. Very many thousands of men were employed. The work was carried out under hardest possible conditions—intense heat, bad food, bad treatment, lack of medical equipment and primitive tools, lack of clothing and footwear. The Japanese issue of clothing was merely nominal, and we spent a great part of the time practically naked, and incredible as it may appear the majority had to work bare-footed for a year or more. The railroad was completed at a tremendous cost in human life, approximately 50 per cent. of the men died. They consisted of English, Australians, Dutch, Malaysians, Chinese and Indians.

At a camp known as Tamakan the Japs had a memorial erected to commemorate 25,000 men (so it was said) who sacrificed their lives on this railroad.

Without exception everyone had malaria, dysentery and cholera. The latter took a big toll of life and many died through weakness, the result of malnutrition or, in plain English, starvation. Hundreds were buried day by day in communal graves.

In February, 1944, we moved south to a rest camp well out of the jungle, where we found conditions somewhat better. Through all this time the morale was excellent and the response and adaptability of the men to the conditions they had to endure was unbelievable. They were ever ready to improvise. Ovens were made from petrol tins and rice cakes of many shapes were baked. The result was known as a "Doover," and the men vied with each other in their achievements as amateur chefs. We got any diversion we could. Music from instruments made from old mess-tins, oddments of bamboo, wire and nails. For Christmas, 1943, at a camp called Tampii we produced a pantomime, "Cinderella." It was a great success owing to the ingenuity displayed in making the necessary "props."

Another tedious journey brought us back to Singapore, a very different Singapore from the one we had left, for the population was almost starving and completely dejected by the "Jap New Order." Here we stayed until we were to be sent to Japan.

Whilst in the jungle a friend and I frequently strayed away from "working parties" in order to see the plants and animals. Often there was magnificent scenery and wonderful flowers—orchids, colocasias, elephant grass and bamboo, a sprinkling of palms, pandanus and cycads. Returning one day from our foray, loaded with sprays of orchids, we encountered the Jap guard, and to save our skins from a savage beating we had to make him a present of the local flora. The Jap sometimes has a heart for flowers and luckily for us this guard was of this type.

On September 4, 1944, thirteen hundred and fifty of us (750 Australians and 600 British) were jammed on the forward part of a

Japanese cargo boat, the "Rakuyo Maru," at Singapore, and we sailed for Kobe, Japan, on September 6. On September 12 we were hit by a torpedo in the bows at 4 a.m. This was from an American submarine who did not know there were prisoners on board. Only a few minutes elapsed before we had another hit, this time amidships.

The Japanese on board showed panic and at once took to what few boats there were. The boat began to sink, but fortunately very slowly. In a calm voice our own officers gave the order "abandon ship." We threw rafts overboard and everything which we thought would float, and then took to the water. The rafts were 6ft. by 4ft. by 4in., and in good condition would support 10 men. Men were in the water three, four or five days. Many were too weak to get on a raft even if they found one and so could only hang on at the side. After hanging on to bits of wreckage for three days I came across a raft (September 15). That evening there were eight of us supported by this raft. We had neither food nor water, and being naked we had nothing to protect us from the burning sun. We were covered, too, by a film of black oil and some were blinded by it and had to swim about feeling for bits of wreckage as they could see nothing. Though in shark-infested waters we saw none all the time we were struggling in the water. I was not rescued until two days later (17th) and by that time I was one of the only two who remained on the raft. Our voices were gone and our lips very swollen. We were in bad shape.

It was a U.S.A. submarine which sighted and rescued us. It is said they picked up altogether 152 survivors, 92 Australians and 60 British. This was about 200 miles off Hong-Kong. The submarine crews worked on us ceaselessly for 8 days and nights in order to get us clean and ship-shape before putting in at Saipan and to make us more comfortable in hospital. No praise of their efforts can be too high. For three days we were tossed about in the submarine in a typhoon; most of the crew were sea-sick but still they gave us every attention.

After a short stay in hospital at Saipan we were again on the high seas, making a call at the Marshall Islands, and then the British survivors were sent on to Hawaii. In perfect weather we entered Pearl Harbour and disembarked. On this island of Oahu we spent several days sightseeing.

On leaving there a short sea trip found us passing through the famous "Golden Gates" and entering San Francisco, California. After a brief stay we said farewell to 'Frisco and faced a 5 days' train journey across America via Chicago to New York, and thence across the Atlantic to set foot once again on British soil.

Gunner R. A. HUDSON.



## MUTUAL IMPROVEMENT SOCIETY.

The Annual General Meeting was held on October 15th; in view of the heavy lecture programme forecast for the New Year, it was decided to hold weekly meetings until Christmas and fortnightly thereafter.

The officers for the season 1944-45 were elected:—

Chairman	...	...	Mr. S. A. Pearce
Vice Chairman	...	...	Mr. C. P. Raffill
Hon. Secretary	...	...	Mr. H. J. Kruger
Asst. Hon. Secretary	...	...	Mr. J. Souster
Committee	...	...	Miss V. E. Paine
			Mr. R. Andrews
			Mr. R. Stuart Brown

(Subsequently Mr. Raffill intimated his inability to accept the vice-chairmanship, Mr. L. Stenning was elected in his stead.)

The following syllabus was arranged:—

1944.			
Nov. 1.	*Woodland Ecology	...	Prof. E. J. Salisbury.
„ 8.	Bee-Keeping and the Fruit Grower	...	Mr. G. Sivyver.
„ 15.	*Liliums	...	Mr. S. A. Pearce.
„ 22.	Spreading and Wetting Agents	...	Mr. R. Parker.
„ 29.	Seed Borne Diseases	...	Dr. G. C. Ainsworth.
Dec. 6.	Propagation of Bush Fruits	...	Mr. R. Andrews.
„ 13.	*Influence of Industrial Pollution on Plant Life	...	Dr. C. R. Metcalfe.
1945.			
Jan. 3.	Annuals and Biennials	...	Miss V. E. Paine.
„ 17.	Debate: Hybridisation—Advantages and Disadvantages		
„ 31.	Just Decorating	...	Mr. C. Drewitt.
Feb. 14.	Tropical Propagation	...	Mr. L. Stenning.
„ 28.	Coleoptera in Relation to Horticulture	...	Mr. R. Stuart Brown.
Mar. 14.	*New Plants for Old	...	Mr. W. J. C. Lawrence.
„ 28.	Wild Life in the Orkneys	...	Mr. J. Souster.

\* Lantern Lecture.

To those past members who, having remembered at odd moments their "Mutual" nights, and wondered how it stands in the war years, may we say that it still lives, shows steady progress from the initial upheaval and that it endeavours to maintain the old tradition.

The season was opened by the Director, his subject—"Woodland Ecology" proving of great interest, especially in view of his promise to supplement it with a practical demonstration at some wooded spot in the summer. Mr. Pearce's lecture "Lilies", commanded close attention. The scientific lectures by Drs. Ainsworth and Metcalfe were much appreciated, the latter, at the close of an excellent lecture appealing for a more humanitarian feeling toward the Jodrell and its occupants, and less fear and awe! It was indeed a very good friend to the Gardens.

Restraint and careful choosing of words is always noticeable at the "Mutual" meetings, it is therefore with enthusiasm that we hail a

venturesome Student. Discussion becomes " warm and friendly "—but brave is the man who suggests a decorative scheme of " gradations of white " !

An innovation last winter was the holding of a debate—"Hybridisation—Advantages and Disadvantages "

This quickly resolved itself into a battle of men against women, which, as those who know wartime Kew will agree, meant the few against the many ! The few, as always, taking the "Disadvantages".

It was obvious from the outset that logic and reasoning could not prevail against a woman's conviction ; the facts that Methuselah lived to a ripe old age without the advantage of modern hybrid vegetables—or that Adam was not lured to his doom by a Cox's Orange Pippin, whilst shattering their verbosity—did nothing to alter their ideals.

And so, after much interesting and, at times amusing discussion, a final appeal was made. Think of the aesthetic beauty of bloom in a species ! The room became very quiet, not a word was spoken—but oh !—those pitying yet withering glances.

Ah me ! possibly this is a foretaste of our brave new world—where women scorn the fragile and unassuming !

We retired defeated—6 votes to 21—" to talk of many things—of shoes—and ships—and sealing wax—of cabbages and Kings."

HARRY J. KRUGER.

LECTURE SESSION, 1944-45.

In view of continued hostilities, the precedent created in 1943 of holding a series of lectures outside Kew, was resumed. With the approval and assistance of the Director and Curator the following syllabus was arranged for lectures at the Richmond Technical Institute, to extend from September, 1944 until March, 1945 :—

R.H.S. GENERAL SENIOR STANDARD.

26 Lectures	...	Horticultural Practice Miss M. Thompson, N.D.H.
26 Lectures	...	Horticultural Principles. Dr. F. R. Irvine, D.Sc.

N.D.H. AND D. INST. P.A. STANDARD.

26 Lectures	...	Horticultural Practice. Mr. L. B. Thrower, B.Sc.
26 Lectures	...	Horticultural Principles. Dr. F. R. Irvine, D.Sc. Mr. H. G. Baker, B.Sc.

6 Lectures 6 Demonstrations	}	Surveying. Mr. R. Turner, M.I.C.E.
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6 Lectures	...	Horticultural Chemistry and Physics. Mr. H. G. Baker, B.Sc.
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In addition, the Curator has promised to deliver 12 lectures on Landscape Design, Construction, etc., and has arranged for a series of 12 Demonstrations covering a wide range of subjects to be given by the Assistant Curators.

## KEW WOMEN GARDENERS' GUILD.

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The Annual General Meeting of the Kew Women Gardeners' Guild was held in December, 1944, and the following Officers and Members of the Committee were elected:—

Miss M. C. Eady (Chairman)  
 Miss B. Allen (Secretary)  
 Miss J. F. Pedgrift  
 Miss I. Sanders  
 Miss J. Helmsing

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## WEDDING BELLS.

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Edgar F. Bundy to Caroline Scott at St. Anne's Church, Kew, on September 9, 1944.

Hubert Taylor to Mary Catherine Potts at St. Michael's Church, Stoke Charity, Hants, on October 10, 1944.

Diana A. Hutchinson, W.R.N.S., to Lieut. A. J. Gibbons, R.N.V.R., of Dunmow, Essex, in Nairobi, Kenya Colony, on October 25, 1944.

Brendan P. Mansfield to Margaret S. Besant (daughter of the late President of the Guild) at Ormond Quay and Scots Church, Dublin, on November 3, 1944.

Jean M. Thompson to William O. Farmer, United States Air Force, at St. Anne's Church, Kew, on December 14, 1944.

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## THE ASSOCIATION OF KEW GARDENERS IN AMERICA, 1944.

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Due to the war, this Association is undergoing a state of suspended animation, but although depleted in attendance it has not entirely postponed its functions. Owing to difficulty of travel both by rail and car and lack of accommodation if attempted, the old Kewites near Boston, New York, and Philadelphia cannot attempt to meet together each year as was possible in more peaceful times. Instead of this being a tale of two cities, it will, therefore, be a brief report of a few who were able to get together for a supper party in Boston on March 25, 1944, and who made a tour of the Spring Flower Show at the Horticultural Hall, with a brief informal meeting in order to maintain the existence of the Association. Those attending were Robert Cameron, Francis Lazenby, John Ellis, James Semple and William H. Judd. The minutes of the meetings in 1943 held at Boston and New York were read, together with correspondence from absent members. A flower show will always bring gardeners

together and the Boston one was no exception, as it was the only spring exhibition held in the United States this year. The attendance of sixty-one thousand visitors was a proof of its interest. The halls were packed every day from March 18 to the closing night of March 25. One hall was devoted entirely to orchids, among which Cymbidiums, Cattleyas, and Cyripediums were exceptionally fine. The mezzanine floor was completely filled with a wonderful display of several species of Acacias in which *A. pubescens* predominated. Another hall was devoted to a miscellaneous collection of Clematis, Azaleas, Amaryllis, Narcissus, etc. The main hall was occupied by the gardens of our Allies, represented by English, Russian, Chinese and American features including a spectacular Pan-American tropical jungle scene—an outstanding achievement.

W. H. JUDD.

Accompanying this report was an interesting account by Mr. Judd of a tour of American Gardens of the north-eastern States made by Mr. R. Cameron and himself during August, 1943. They left Boston on July 27 and returned home on August 17 after having visited some 20 gardens, nurseries and parks. The account is of great interest to those who, like Mr. A. Osborn, know the north-eastern States and their gardens, and would be read also with profit by anyone intending to visit America. But owing to pressure on our space the Committee much regret that it cannot be printed in the *Journal*. Mr. Judd concludes with these words: "Despite the fact that Mr. Cameron is an octogenarian he never took a day off during the trip," though they were out every morning by 8 o'clock and never got in till 10 p.m.—Ed.

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### THE FIRST KEW GUILD DINNER.

By C. H. Curtis, F.L.S., V.M.H.

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During the Annual Meeting of the Kew Guild held in the Lecture Room on February 25, 1897, Mr. John Weathers (the author of that old stand-by, *The Bulb Book*) urged that "some arrangements should be made for a general gathering of Kewites sometime during the summer, either by means of a cricket match or a dinner or a conversatione." It was all very well, he said, to meet in a crowded room in winter, but something more sociable was desirable.

During the early years of my connection with horticultural journalism, business brought me into close touch with John Weathers, R. Hooper Pearson (a former editor of *The Gardeners' Chronicle*) and Tom Humphries (one time second in command at the R.H.S. Gardens at Chiswick and later Curator of the Botanic Gardens at Birmingham), and we often discussed the desirability and possibility of a Kew Guild dinner and we talked the matter over with others as opportunity served. In due course the matter was taken up by the Guild Committee. Mr. Watson (the Assistant Curator, who was more interested in the social side of things than the Curator, Mr. Nicholson) was not keen, but

the subject received mention in the Annual Report for 1899-1900, and at the Annual Meeting held in February, 1900, there was an animated discussion and it was finally agreed "that the Guild should dine sometime this year, preferably in the same week as the Temple Show, at a cost not exceeding five shillings a head". Messrs. J Weathers, T. Humphries, R. H. Pearson, C. H. Curtis and C. Girdham agreed to undertake the arrangements.

Thus we formed ourselves into a Dinner Committee and, probably because the first meeting was held at my house, the job of Hon. Sec. fell to me. We decided that the eve of the Temple Show would be the best date since the great May exhibition drew many Kewites to London. The next business was to choose a venue, and the Holborn Restaurant was agreed on. We had very little idea how many would respond to the letter sent—via the Kew post bag—to every Kewite we thought likely to attend. We hoped for a hundred and, greatly daring, told the Restaurant people to prepare for that number. Our hopes were justified though we had many anxious hours between times.

There was another anxiety. Would the Director (Sir William Thiselton-Dyer) preside? We knew so much would depend on that. I had to deliver the invitation duly apprised by Mr. G. Nicholson and Mr. W. Watson; Sir William received me graciously and accepted it. I felt elated, but not for long, for as soon as we came out of the Director's office Watson said: "If you fellows don't make a big success of this, an Annual Dinner will be for ever damned." Not very encouraging or helpful. When I told the others they only laughed and said: "Just like W. W.—let him wait and see." (It is interesting to record that Mr. Watson himself ran the second Dinner. Our foundations were well and truly laid. We builded better than we knew.)

Having secured the Director the next "headache" was the preparation of a programme. How many drafts were destroyed I don't remember, but they were numerous. Finally, one that seemed good was discussed with Mr. Nicholson and Mr. Watson and, with some minor emendations this was submitted to the Director for approval. It is given in the *Journal* (p. 7, 1900). We persuaded Mr. J. M. Hillier, of the Museum Staff, to sing a couple of solos—he had a fine tenor voice. "Pat" Weathers promised to warble "The Bandolero." Under the title of "O.P.Q.s" the Committee formed itself into a glee party, strengthened by dear old Pa Badderley (the extremely clever "Preparer" in the Museums who preceded Mr. L. Harding) who had a powerful falsetto voice. Goodness knows how many times we practised "Dame Durdan" and "Three Chafers" at my house, my wife acting as accompanist. The neighbours must have thought we were making a bad attempt to compete with the famous Boston Park Glee Club!

However, all's well that ends well. The *Journal* records "the first gathering and feast of the Guild, which took place eight years after its inception, was a great success." The Dinner Committee had warm collars but when all was over we felt the Kew Guild Dinner was

an established function and were certain of it when we received the following letter from the Director, dated May 23, 1900 :—

“ Dear Mr. Curtis,

I must write a few words of congratulation on the great success of the first dinner of the Kew Guild. It was a striking gathering and I think a very agreeable evening.

As a practical administrator I know that a big thing like this is not pulled off with smoothness and success without an immense amount of preparatory hard work.

I can only say that the event bears eloquent testimony to the organising capacity of yourself and the dinner Committee.

Yours sincerely,

W. T. THISELTON-DYER.”

Sir William was not given to flattery. I have carefully kept that letter and when I look at it occasionally memory takes me back forty-four years. I remember the troubles we overcame and the congratulations showered upon that Dinner Committee, of which, alas ! I am the sole remaining member.

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#### NOTES FROM THE GARDENS, 1944.

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The successful struggle against heavy meteorological odds of the Allied Armies after D-Day will always remind us that the summer and autumn of 1944 were noted for wind and spells of rain. The Curator and his staff agree that the season was not a kind one. There were air raids, late frosts, spring drought and a sunless summer, but in spite of crippled foliage and a bad start most plants survived and recovered, and the transformation of brown lawns to green turf when rain came was never more marked. The lawns were not actually burned up, hence recovery was rapid. Though bedding was on a moderate scale and many jobs in the Arboretum and elsewhere had to be held over, one heard from visitors nothing but praise for the general appearance of well-being shown by the Gardens.

The season opened with a week or more of raids at the end of February ; the damage to the trees and the tragedy of the Temperate House are described in a note on p. 398. The clearing away of debris caused much delay and a certain amount of work planned to be carried out in the Arboretum had to be postponed for the season, but in spite of this the routine work was carried on and several alterations were effected. The most interesting piece of new planting concerned the Magnolia collection. About three dozen trees and bushes were balled up and moved with the small transplanting machine during April. Half were added to the Magnolia collection near the Unicorn Gate and the other half to the small collection of more decorative species and varieties to the north of the Azalea Garden. There are now about 75 Magnolia trees and bushes in the main collection and 65 near the Azalea Garden. The two together include all the 32 species listed in the Arboretum Handlist of 1934, and also 25 varieties.

A feature of the early spring was the presence of about 30 fruits on the large tree of *Magnolia grandiflora* var. *ferruginea* in the Azalea Garden, several of which developed their vermilion coloured seeds. An article on the fruiting of this specimen was published in *The Gardeners' Chronicle* (May 6, 1944, p. 190), and it was pointed out that an important factor leading to fruit production in this species was the date of flowering, an early flowering variety such as var. *ferruginea*, which begins to flower in June, having a better chance to develop "cones" than the commonly grown var. *lanceolata*, which seldom flowers before August. It was ascertained that several trees of var. *ferruginea* in the Gardens of Goodwood House had fruited regularly for the past ten years.

As to the late frosts, the worst nights were those of May 6, 7 and 8. Several weeks of warm growing weather in April were followed by a week of cold northerly winds which damaged the young growth. When the winds subsided bright days with still cold nights set in and at Kew there were 7 deg. and even 8 deg. of frost on the grass. Patches of potatoes were browned and also beans, where a risk had been taken with early sowings. As far as the beauty of the Gardens was concerned, the Chinese Rhododendrons suffered most, especially those around King William's Temple, and also the series of beds to the south-west where there had been a beautiful display of blossoms for 2 or 3 weeks. The Azaleas, many of which were in flower, however, escaped. The flowers and young shoots of *Pieris* were killed, not only those of *P. Forresti* and *P. formosa*, which are always liable to be damaged, but the much hardier *P. japonica*. Owing to its later development *P. floribunda* escaped. Amongst other plants the foliage of which was blackened were various species of *Magnolia*, but *M. Kobus*, *M. salicifolia* and *M. parviflora*, whose leaves were already expanded, did not suffer.

In mid-June Flying Bomb attacks commenced. As all work near the glasshouses was attended by great risks, Klaxon horns were fitted up near each group of houses to give warning of imminent danger. The first half of September brought V2's. No damage of any consequence, beyond a certain amount of broken glass, was caused in the Gardens either by V1's or V2's. As a precaution against accidents the glasshouses and museums were closed to the public in June.

An innovation during the year was the use of dwarf Dahlias in the beds in the Broad Walk. It was a labour-saving scheme—much fewer plants were required and the planting itself was not a complicated process. As usual the beds were paired. The varieties employed were as follows:—Park Beauty, K.A. Victoria, Baby Royal, Princess Marie José, Scarlet Congo, Dawn, Dobbie's Bedder, Mrs. Musgrave Hope, Scarlet Gem and Rubens.

Passing now to autumn, in the Herbaceous Department the most important item was the commencement of the construction of a Chalk Garden, which is the subject of a special article by the Director

(see p. 363). With shortage of labour little other large-scale operations could be attempted. A partial overhaul of the beds in the Herbaceous ground was, however, taken in hand, a commencement being made with the Compositae where species and varieties of *Aster* and *Helianthus*, which were considerably over-represented, were reduced by about 50 per cent.

The old Lebanon Cedar by the Flagstaff which had been failing for some years did not long survive after the amputation of its lowermost limb a year ago (see *Journal*, 1943, p. 249). The leaves of several branches began to turn brown in the summer, and by late autumn most of the tree was dead and it was taken down before Christmas.

The view of the Flagstaff is now much more impressive, especially from the northern approach, and the two young trees of Douglas Fir at the foot of the mound, planted to illustrate the nature of the tree from which the mast was derived, now stand out conspicuously. They are about 36ft. high and one of them is coning freely.

The Chinese Persimmon, *Diospyros Kaki*, has seldom fruited so well as it did in 1944. The tree on the wall near the Melon Yard had well over 100 fruits on its upper branches, and that under the very large *Magnolia acuminata* near William IV's Temple had about 50. Two other Persimmons are in cultivation at Kew, namely *D. virginiana*, the Virginian or true Persimmon, found wild in many of the south-eastern States of the U.S.A., and largely cultivated in America, and *D. Lotus*, the Date Plum, or, as it is sometimes called, the Mediterranean Persimmon. This is really an Asiatic species, ranging from S.E. Asia to Japan. The fruits of all three species are edible, though as grown at Kew they are very astringent. *D. Kaki* is considered the best, and may be eaten raw, dried, scalded, or as a preserve. The word "persimmon" is derived from the name used hundreds of years ago by aborigines of Virginia for their native species.

A species of *Euonymus* which gave an unusually good show of fruit at the end of October was the evergreen *E. myrianthus*, described by Dr. W. B. Hemsley in *Kew Bulletin* for 1893. Several specimens exist in the Gardens, the best being the plant in the grass at the south-east corner of the Succulent House. It had been there for several years and in spite of the numerous green flowers it never fruited and appeared to be rather a dull evergreen for such a prominent position. But it certainly "made good" in 1944. The aril of the fruit is at first yellow in colour, then orange, and finally orange-scarlet. The large fruits are very attractive against the background of evergreen foliage and they last until December and even into January, though they become dingy as a result of fogs. Mr. F. G. Preston, Superintendent of the University Botanic Garden at Cambridge first drew our attention to the beautiful fruits and sent sprays for painting. The species was introduced from China by Wilson in 1908, and a few years later was re-described by Loesler & Rehder in *Plantae Wilsonianae* under the name of *E. Sargen-*



*tianus*. Hemsley's name, *E. myrianthus*, must, however, be retained since it antedates the American name by nearly 20 years.

The *Buddleia* collection in the canal beds north of the Temperate House was overhauled during the winter, several old trees of *B. Davidi* and other species being removed and a number of young specimens brought from the nursery to replace them. Amongst the latter were several lesser-known species, namely *B. crispa*, *B. japonica* and *B. tibetica*. The latter is a very rare species allied to but distinct from *B. Farreri*. Only one mature plant is known in this country, namely that in Lord Wigram's garden at Windsor Castle, which was sent to him as a seedling from the Darjeeling Botanic Gardens. The three young plants at Kew are cuttings from this tree.

A young female tree of *Ginkgo biloba* new exists near the Main Gate, the site selected for planting being between the old *Ginkgo* near the *Wistaria* and the one planted by Queen Mary in November, 1923. The plant is derived from a cutting off a female tree and was planted by the Director.

Female trees of *Ginkgo* are very scarce in this country. The old tree already referred to (which is a male and produces its catkins every year) had a few female branches grafted on to it in 1911. In the autumn of 1919, after the leaves had fallen, four "fruits" were observed hanging from one of the grafts. By an accident, however, the female branch was broken off and at the present time there are no fruiting *Ginkgos* in the Gardens.

A.D.C.

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## HORTICULTURE IN INDIA.

By Flying Officer H. R. Cocker, R.A.F.

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India is continental in size and it is not possible to generalise when writing of its landscapes and countryside. The trained horticulturist, however, soon reaches the conclusion that the native flora of India is remarkably poor. This applies particularly to the plains, which constitute the bulk of the country. In the mountainous areas the reverse applies and from its high altitudes India has provided us with some of our finest garden plants. During road and rail journeys of from one to ten days' duration, taken at various times of year, one may look in vain for anything to compare with a European field of poppies or a hedge of hawthorn and there are no substitutes for the masses of *Ornithogalums*, *Gladioli* and other bulbous plants which so delight the eye in South Africa. Indian villages are equally lacking in floral colour; the traveller never discovers small gardens full of flowers, either native or imported and it is very obvious that horticulture has no place in the life of the average Indian.

### NEED FOR FOOD CULTIVATION.

The reasons for this lack of flowers soon become apparent. Firstly, Indians themselves have little or no natural interest in gardening or

flower-culture. It is true that Indian women are fond of placing brightly coloured flowers in their hair and floral garlands are always worn on ceremonial occasions, but it is vivid colour which makes the appeal rather than the actual flower, just as highly coloured dress materials are always favoured. The second reason for the lack of flower-culture in India is the great poverty of the majority of its 400,000,000 inhabitants. Gardening rarely reaches a high standard in a poor country. Any Indian who is fortunate enough to be the owner of a piece of land grows food ; the cultivation of flowers would be a waste of land and labour in a country where tens of millions are always on the verge of starvation and where each leaf, blade of grass and ear of grain is watched with anxiety and jealousy lest some disaster should befall it before it is harvested. As the recent disastrous famine in Bengal has shown, the slightest disruption of the regular supply of food from the land brings instant hunger to thousands. There is no surplus production and no reserve ; that which is grown today is eaten to-morrow. Trees and shrubs which provide food for cattle and goats are almost always disfigured and defoliated through their leaves and young branches being constantly stripped off for fodder ; as the leaves grow so they are picked and eaten. Nothing is wasted or left to rot ; every kind of edible seed, fruit berry and leaf is pressed into use to appease an everlasting and never completely satisfied hunger. Even manure is too precious to be returned to the land ; it is collected, dried and burnt as fuel. This practice, which has been carried out for centuries, is having a serious effect upon the fertility of the soil ; the land is always giving and receives nothing in return. Manure is collected for fuel, leaves of such crops as maize and bananas and the foliage of fig trees and palms are used for thatching and wearing-apparel, and the small-holder is far too poor to buy chemical manures, especially as in a great many cases he is very much in debt and has been financed by a money-lender so that he can grow at least some crops to pay interest on a loan originally made to his forefathers ! At present there are a great many government schemes afoot for the relief of the peasant, and to encourage him to use manure on his land there is a huge plan of new forest planting being considered in order that wood could be used for fuel instead of dried manure.

#### WILD FLORA.

The chief reason for the comparative lack of wild flowers throughout the Indian countryside is due to the intensive cultivation of every inch of arable land. In some rural areas the population is as high as 1,525 people per square mile and these people live entirely upon what they can grow ; many of them have never seen a town or ever possessed a coin. The vast areas devoted to rice fields obviously cannot support any native flora ; every single rice seedling is planted by hand and the flooded fields are kept weeded by hand. Amazing ingenuity is shown in the construction of these rice fields. In order to maintain a regular depth of water the fields have to be completely level and they are flooded by the most complicated system of irrigation. The whole process is carried out with tools which have not changed for a thousand

years, or more; oxen, leather skins for carrying water and wooden ploughs. This type of cultivation is particularly difficult in hilly districts and level areas are obtained by terracing (Fig. 1.). The cultivation of rice is the most important of all India's many agricultural activities but it is an extremely monotonous crop to the eye. One can literally travel for hours at a time without seeing any other plant, with the exception perhaps of a group of cocoanut palms on the outskirts of a village of dried mud huts, and possibly an isolated specimen of *Bombax malabaricum* will now and again make a crimson splash of colour. The trees often occur in places so remote that only a handful of people ever see their magnificence and where they certainly do "blush unseen." In full flower, a 70-foot high specimen of *Bombax* is truly a noble sight with its huge heads (often a foot across) of gaudy crimson flowers seen against a clear, intensely blue sky. This enormous tree is equally interesting when carrying its seed pods, each one from six to eight inches long, two inches wide and packed with cotton-wool like pellets. Hedges and fences are rarely seen, but most villages are surrounded by rows of *Agaves*, *Euphorbias* or *Opuntias* which make effective barriers against wild animals or stray cattle. Large areas are devoted to the cultivation of wheat and sugar canes, while other vital crops are corn, bananas, cotton and maize. Areas devoted to pasture are greatly overgrazed and local flora has little chance of developing. During the dry seasons conditions often become acute and when no more blades of grass are visible the Indian digs up the roots of the herbage, shakes out the dust and dirt and feeds this to his livestock. The individual grass plants are not killed as their roots penetrate to a depth of several feet and when rain does come fresh shoots soon appear from the hidden roots. As this system has been practised for many centuries one is tempted to speculate as to the number of shallow rooting species which have been exterminated. In most districts bamboos grow very freely and a new industry is being developed for the manufacture of brown paper from these plants. When areas are too poor for cultivation and too rocky and stony to be of use even for grazing, then a certain number of wild flowers have an opportunity of growing (provided the soil is not periodically washed away by rivers which overflow their banks with monotonous regularity during every wet season), such plants as pink and yellow *Lantana*, *Genista* and *Bougainvillea* will appear among outcrops of rocks and stones. An extremely pretty plant which appears to persist in most parts of India is an introduction from Mexico, *Argemone mexicana*, an erect, branched, prickly annual with bright yellow, poppy-like flowers three inches in diameter and handsome grey-green foliage. A dwarf, semi-shrubby *Datura* is also fairly common while among the climbers *Clematis* and *Gloriosa* are sometimes found. In some districts such as Bengal, where there are a great many ponds and small lakes, the aquatic vegetation provides the best show of colour with vivid splashes of white and crimson *Nymphaeas*, and masses of pale mauve *Eichhornia speciosa*. These are frequently gathered and sent to market but they do not last long.

## TOWN GARDENS AND GARDENERS.

Strangely enough, the best flowers and finest gardens are to be found in the towns. In the European districts of such cities as Delhi, Calcutta, Bombay and Madras, where institutions such as clubs, official residences, hospitals, schools, head-offices of business houses, missions, churches, etc., are surrounded by extensive compounds and where Europeans have their houses and bungalows, some really lovely gardens have been made, but they are chiefly furnished by plants which have been introduced from outside India. The climate, however, deprives Europeans of most of the pleasures of gardening. In a temperature which is frequently over 100°F. in the shade even the lightest of manual work is an effort and practically everything has to be left to local labour. Unfortunately this labour is usually very unskilled and has little liking or tolerance for "foreign" methods or any progressive innovations, but the garden-owner is more or less forced to leave things to this "Mali." As these so-called gardeners only receive the equivalent of about eight shillings per week in pay, one cannot expect a very high standard. It is almost impossible to teach them to use manure, keep the soil-surface loose or water without literally pouring it on by the pailful at regular times each day, regardless as to whether the plant requires water or not. Consequently "rotting at the collar" and "damping-off" are very common complaints. There are indications that "soil-less gardening" may become popular in Indian towns and already some interesting preliminary work has been carried out in Calcutta, Madras and Bangalore. Pure "hydroponics" has the great disadvantage that mosquitoes find a perfect breeding ground in the tanks of solutions, but the modified form of such cultivation known as "aggregate culture" appears to be eminently suitable for such a country as India, where the great heat readily warms the growing medium and where vegetative growth is always rapid. In town gardens flowering shrubs are greatly favoured, especially *Hibiscus*, *Bauhinias* and *Cassias*, while *Cannas* are always very much in evidence and flower almost all the year round. Much use is made of European annuals and *Zinnias*, *Antirrhinums*, *Convolvulus* and *Asters* do particularly well. It seems strange that so few of the more modern South African annuals have been introduced, *Venidium*s and *Dimorphothecas* are almost unknown, although *Gerberas* are well established. A very common but exceedingly beautiful shrub is *Duranta Plumieri* which seems to produce its delightful, mauve coloured flowers and its bright yellow berries simultaneously all the year round. *Petrea volubilis* is also much grown and flowers with great freedom. Another very effective shrub is *Congea tomentosa* but a well developed specimen requires a great deal of space. Many of the *Bougainvillaeas* are of colours quite unknown in Europe, especially the orange-pink shades. They have apparently been raised by small, local nurserymen and bear purely local names. Quite a number of them are far superior to those grown in the South of France, etc., and would be well worth introducing into Europe. These *Bougainvillaeas* are generally the most interesting plants grown by the numerous little nurseries which generally cluster round the approaches of public parks, etc. Most of their stocks consist of *Crotons* and palms and a few orchids.

## ROADSIDE PLANTING.

Roadside planting has been very greatly developed for shade rather than for floral display, but few of the subjects used are natives of India. Among the flowering trees *Jacaranda* is extensively used and *Peltophorum ferrugineum* is also deservedly popular; this is a native of South America and is a most attractive tree. *Cassia Fistula* makes a beautiful display and after flowering its two-foot long seed pods provide further interest. *Millingtonia hortensis* is especially popular because of the lovely perfume of its white flowers and *Poinciana regia*, although a native of Madagascar is, without doubt, the most showy of all flowering trees grown in India. One of these trees, when covered with masses of its orange, scarlet and vermilion coloured flowers is literally a fountain of flame, particularly when seen against a bright blue sky, and its French name "Flamboyante" best describes it. Among the purely shade giving trees the *Ficus* are the most useful. *Ficus glomerata* is very widely planted and both the leaves and small, purplish-red fruits are used for fodder. Other species extensively used are *F. religiosa*, *F. benghalensis* and *F. Benjamina*; the latter is a particularly handsome shaped tree.

## PUBLIC PARKS.

Most of the big towns have well laid out and carefully maintained public parks, while the magnificent Botanical Gardens of Calcutta are world famous. To a Kewite it is a matter of very great pride and satisfaction to remember that in almost every case these parks, botanic gardens and various Government House Gardens have been made by Kew trained men and in the majority of cases are still under the direction of Kewites of many nationalities. New Delhi is pre-eminent and the magnificence of its avenues, vistas and formal gardens has to be seen to be really appreciated and understood. In a hundred years time, when the many trees used in the layout have fully matured, the effect will be even better than it is now. The Government of the native state of Mysore has been particularly ambitious and enterprising; the administrative capital at Bangalore is literally a garden city and its many public parks are lavishly planted with a very fine collection of flowering trees and shrubs. *Poincianas* are also greatly used and their coloured bracts attain a size and brilliance which is really amazing. The State City of Mysore itself is also magnificently planted and has some stately avenues of *Butea frondosa*, while much use is made of the ever popular "Frangipani" (*Plumeria acutifolia*). The modern formal gardens below the huge Krishnarajasagara Dam must rank with some of the finest in the world, with their thousands of fountains and hundreds of acres of formal gardens (Fig. 2). Most of the Indian Princes maintain vast grounds and lovely gardens round their palaces and there is usually little difficulty in obtaining permission to visit them. Flower Shows are regularly held in towns where there is a European population of any size. In one large city where the writer was invited to judge at a local show the number of exhibits was fairly high, but the quality of the exhibits was extremely poor and, to a large extent, consisted of annuals grown in pots. It was, however, most

pleasant to return to peacetime surroundings again, if only for a few hours, and the atmosphere was a vivid reminder of past happy days.

#### MAIN ROADS.

There is one interesting feature which forcibly strikes any traveller who continuously makes long road journeys about India. Main roads are poor and scarce but where they do exist they are almost invariably planted on either side with trees, generally *Ficus glomerata* or *Tamarindus indica*. These trees are often of great age and form complete tunnels of greenery for many miles. One is tempted to speculate as to who had the foresight and energy to plant them; they certainly are a valuable asset, especially when one has to travel hundreds of miles through dry and dusty landscapes with a shade temperature well up in the hundreds. Unfortunately, these trees are not now being very well looked after and there are no signs of replacements when the original trees die, consequently one frequently finds long gaps and many bare spaces. *Tamarindus indica* (The Tamarind), which is so frequently used for roadside planting, is one of India's finest trees; it grows to an enormous size and reaches a great age. The girth of some trees has been known to exceed forty feet. The fruits are greatly valued and are used for curries, chutnies and fruit drinks. Other interesting trees frequently met with are *Artocarpus integrifolia* (The Jack Fruit) which produces gigantic fruits up to thirty inches long and twelve inches in diameter, weighing up to sixty pounds. *Sapindus mukorossi* (The Soap Nut), a native of China but now much planted in India, provides a substitute for soap as the fleshy portion of the fruit contains a substance which lathers well with water. *Moringa oleifera* is a small deciduous tree with thick, rough, corky bark. The leaves are most attractive, often two feet long and much divided into leaflets, while the white flowers, which are borne in large loose clusters, have an exquisite perfume. The fruits are pod-like, eighteen inches long and eaten as a vegetable. *Azadirachta indica* (The Nim Tree), is a tree of many uses. The seeds give an oil useful for burning, the wood is durable and much used for agricultural implements while the dried leaves are used to keep insects out of clothes, books, etc. One of the biggest and most useful of all India's trees is the Mango (*Mangifera indica*). This is certainly the most popular fruit tree in India but the fruits vary greatly in colour and flavour and the best varieties have to be grafted.

#### THE HIMALAYAS.

When one leaves the plains and travels to the Himalayas and the mountains of the north there is an almost unbelievable change of scenery, both geographical and floral. A new arrival receives many thrills when confronted with a great many of our most cherished garden plants growing in their native habitat. Perhaps the greatest surprise is *Rhododendron arboreum*; here it really is a tree (Fig. 3), reaching a height of thirty feet with a trunk frequently over five feet (!) in diameter. The finest specimens appear to be at an altitude of about 7,000 feet and when in full flower such monsters are a magnificent sight,

especially as the colours are generally deep red or bright pink. The *R. arboreum* on Lake Maggiore, in N. Italy are large but those lovely specimens would be dwarfed by these Himalayan giants. Among the many beautiful flowering shrubs which are such a feature of this area are *Grewia oppositifolia* with pale yellow, star-like flowers; *Indigofera enneaphylla* which is quite prostrate and whose small, bright red flowers lie in the short mountain grass or trail over grey coloured rocks. Several species of *Berberis* are common, while *Cornus capitata* is a constant reminder of home. *Viburnums*, *Acers*, *Rhus*, *Euonymus*, etc., are all plentiful and a very common tree is one of the walnuts (*Juglans regia*?). Among the Conifers there are *Pinus Wallichiana*, *Cedrus Deodara*, *Taxus baccata*, and *Cupressus torulosa*. Ferns are particularly common during the rainy season (June-Sept.). In the Simla area alone there are reputed to be over seventy species including *Adiantum*, *Asplenium*, *Aspidium*, *Nephrodium*, *Polypodium*, and *Osmunda*. Many of the smaller ferns make their homes on the trunks and branches of living trees and during the wet weather really beautiful effects are obtained. The flora in this district is so rich that one is almost overwhelmed, but among the bulbous and herbaceous plants the following are outstanding. *Satyrium nepalense*, a charming little tuberous rooted orchid with pale pink, hyacinth scented flowers infrequently found in scattered colonies throughout the woods. Wild Ginger (*Hedychium acuminatum*) which is very common and when in flower provides drifts of fragrant white flowers. *Polygonum amplexicaule* var. *speciosum*, quite a troublesome weed in cultivated areas but very beautiful in its native state owing to the gorgeous colour of its deep carmine flowers. *Iris nepalensis* with its pale violet blossoms; the Indian Lily of the Valley, *Ophiopogon intermedius* which, unlike its English namesake, has no perfume but is most attractive with slender, white, muscari-like inflorescences. *Roscoea procera* is perhaps one of the most common of all wild flowers in the Western Himalayas, and one finds literally hundreds of square yards of them in meadow land and thin woods. A beautiful, deep mauve variety of *Anemone rivularis*, which is extremely rare. Several *Habenarias* with their strange, greenish-yellow flowers and, perhaps the strangest of all flowers in this area, *Arisaema helleborifolium* which, as its name suggests, has leaves which closely resemble our "Xmas Rose," only on a much larger scale, and for the inflorescence carries a huge calla-like, greenish spathe on a tall thick stem.

#### FLORA OF THE NILGIRI HILLS.

Down in the Nilgiri Hills of South India there is an entirely different type of flora. *Rhododendron arboreum* still persists although it is much smaller, but the vegetation is extremely mixed and confused. The area is so very fertile that imported plants from a dozen different countries have become naturalised and provide a complete floral League of Nations (all living happily together). Australia has played a very large part in the present appearance of the landscape and has contributed *Grevillea robusta*, three or four species of *Acacia* and half a dozen species of *Eucalyptus*. These were all originally introduced as shade trees for the tea plantations, which are here a great feature of

the landscape, but are now quite wild and are greatly used for fuel. A purely local industry has also grown up to extract the oil from the *Eucalyptus* leaves. These plants from Australia grow side by side with masses of *Richardias* from South Africa, *Osbeckias* from China, a great many "*Nasturtiums*" (originally from Messrs. Sutton & Sons, no doubt), *Argemone mexicana* from Mexico, *Solanum jasminoides* and many subjects such as *Fuchsias*, *Geraniums* and roses which have been introduced from Europe. Among the true natives there is a minute Gentian with vivid, deep blue flowers no larger than the head of a match, while *Lobelia excelsa* makes some imposing groups when sending up its stately flower spikes among the rocks. At Coonor (7,000 feet) and Ootacamund (8,000 feet) two of the principal hill stations in the Nilguries, there are some particularly beautiful gardens. At the former the public park is very fine indeed and clever use has been made of a natural lake, while full advantage has been taken of the variations in altitude contained in the park boundaries. At Ootacamund the official home of the Governor of Madras, Government House Gardens are another lovely sight and contain a fine collection of plants, among which *Passiflora radicans* and white *Watsonias* are particularly showy. These gardens possess a most unusual natural background in the form of a solid cliff of rocks which rise to a height of several hundred feet. It is among these rocks that the most beautiful of all the native plants is found, namely *Lilium neilgherrense*, and the sight of a colony of this treasure in flower almost repays one for having to stay on in India!

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#### WITH THE R.A.F. IN THE AZORES.

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The islands of the Azores are so little known to most gardeners that to be there whilst serving with H.M. forces must be regarded as a piece of good luck. They lie out in the Atlantic and are well north of the Canary Islands, but though outside the Tropic of Cancer their vegetation seems almost tropical in luxuriance owing no doubt to the great humidity of the atmosphere. One has therefore the opportunity of seeing plants, which at home we treasure in the greenhouse or stove, growing and thriving as in their native habitat.

It has been impressed upon me that an experience such as this is almost essential to the proper training of a gardener whose ambition it is to deal with collections of hothouse plants.

It is beyond me to describe my first impressions while travelling from shore to camp and I will not attempt it. The soil is fertile, rich in colour and on close inspection one detects volcanic constituents, for the whole archipelago is volcanic in origin. One road I traversed was called the "*Hydrangea Road*" as this plant forms a continuous hedge for miles along either side, with masses of *Vinca* creeping about in the shade at the base.



The plants and flowers amazed me and brought back memories of student days at Kew. Richardias were much at home and were flowering profusely in the ditches and low damp ground and in between was a bright yellow Oxalis forming almost a carpet. Callistemons, the Australian "Bottle Brush", appear as trees and were a mass of bright red brush-like flowers. Fine specimens of *Aloe arborescens* could be seen everywhere, tall and stately against native dwellings.

Some small, spinney-like groups of trees turned out to be a species of *Eucalyptus* and intermixed with these were various kinds of Acacia. *Solanaceae* was well represented by *Datura suaveolens* and bright fruited Capsicums, the white hanging trumpet-like flowers of the former always catching the eye.

Small plantations of Pineapples (*Ananas sativus*) are plentiful, but the plants come I am told from the next island where they are raised under glass to provide a little extra heat at the start. Bananas are grown too but are rather poor, with shabby, torn foliage, while the tougher but similar looking genus *Strelitzia* is quite unharmed and flowers proudly.

The Portuguese (to whom the Islands belong) being noted for their wines, means of course that vineyards are plentiful. These are usually small, square, and walled-in, with the vines planted in the centre—the branches pegged to the ground which is covered with a very light porous rock. The buds are only just beginning to burst after their dormant period, so I have yet to see cropping and harvesting.

There is so much work to do here at present that there is no opportunity for a day off, to hunt around and botanize and study the native flora which in some ways would be even more interesting. The problem of the origin of native island flora and fauna is of course always a favourite theme for study and speculation. But it is the introduced plants which appeal most to the gardener and others I have noticed so far whilst travelling along the rugged roads include Nerium oleander, Cannas, Citrus, Bignonias, Agapanthus, Camellias, Hibiscus, Ricinus, Fuchsias and many kinds of Agave.

(From David Hollis, R.A.F. Azores Force. March, 1944.)

## VIRUS DISEASES OF VEGETABLES.

By G. C. Ainsworth, Ph.D., Imperial Mycological Institute, Kew.

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When vegetables are grown as a field crop, or in a large and more or less isolated kitchen garden, drastic measures may be taken to eliminate pests and infectious diseases with the least risk of reinfection from adjoining plantings. Allotment plots, however, are in a less fortunate position because the many patches of the same crop scattered over the allotment area are all under different ownership, and in the absence of any co-operative effort much of a plot-holder's care and trouble in trying to keep his own plants healthy may be wasted.

This is particularly so in the case of virus diseases. Allotment plots often show a higher proportion of these diseases than favourably situated private gardens and if this state of affairs is to be remedied, every plot-holder should become acquainted with their nature and their method of spread. It is only by the possession of such information that an individual can combat his own virus troubles intelligently and can play a part in the development of a well-informed public opinion and one which will call for and be able to enforce co-operative action.

During the past two seasons virus diseases have been a major problem on the allotments in and around Kew Gardens. It has been exceptional for any marrow or cucumber to have grown to maturity without becoming infected by cucumber mosaic virus, and the same virus has been responsible for "fern leaf" in tomato and for a mosaic disease in spinach beet. Brassicas have been attacked by a mosaic disease (probably caused by cauliflower mosaic virus), lettuces have failed to heart because of infection by lettuce mosaic virus, while peas, French beans, and onions have also suffered in varying degrees from other viruses.

There is usually no cure for a virus disease—although suitable cultural treatment may at times lessen the severity of the symptoms—so that control measures have to be designed to prevent infection. An essential preliminary is to ensure that the planting material is healthy. Tubers, cuttings, and other vegetative propagating material should always be taken from carefully selected virus-free plants. Seed too, should only be saved from healthy plants.

## INSECT TRANSMISSION.

Plant viruses are typically spread in the field by sucking insects such as greenfly (Aphides). Thus any measures for reducing the numbers or restricting the movement of these insects tend to reduce the spread of virus diseases and the chances of introducing disease into healthy crops. Old brassicas, etc., on which aphids may over-winter, should be destroyed, and the use of insecticidal dusts and sprays is at times beneficial. An infestation of insects able to transmit virus diseases is relatively innocuous in the absence of virus in the crops, so that

plants harbouring viruses should be searched for and all those that are diseased or suspected of being diseased rogued out. Careful inspection and roguing out are particularly worth while in the early part of the season when most of the young plants should be healthy, and when it is not too late to fill the resulting gaps. At this season (though it is not always realised) the numbers of greenfly are often highest and the disease is more apt to be spread. It is interesting to note that on account of the smaller aphid population in July and August late summer plantings of spinach beet and lettuce are frequently less seriously affected than the spring sowings.

#### CONTACT TRANSMISSION.

In most virus diseases insects are the only known agent by which the disease is spread under field conditions, but in others, including the mosaics of tomato, cucumber, and bean, the virus is more or less easily communicated by the contact between diseased and healthy plants. This may be brought about by the rubbing together of the leaves of adjacent plants in a wind or by disturbances and injuries resulting from cultural practices. In these cases care should always be taken when handling diseased plants, and after handling such plants the hands and pruning knife should be well washed with soap and water. Tomato mosaic virus (which is commoner under glass than in the open) is spread exceptionally easily by juice-inoculation and it is also able to survive for long periods in plant-debris when quite dried up. Inactivation of cucumber mosaic virus accompanies the death of its host, and it is probable that few, if any, viruses survive in well-rotted compost.

#### SEED TRANSMISSION.

Although virus spreads throughout the whole of an infected plant, infection of the actual seed and through it transmission of the disease to the progeny is relatively uncommon. But the viruses causing mosaic in dwarf and climbing French beans (*Phaseolus vulgaris*) and in lettuce are regularly transmitted in this way and it is probable that most outbreaks of these diseases originate from the use of infected seed. In both lettuce and bean, disease becomes apparent as a mottling of the first few leaves and any seedlings suspected of being affected should be rogued out. Cucumber mosaic virus is also seed transmitted in cucumber (and probably vegetable marrow), and though the percentage transmission may be low the disease is quickly spread from a few infected plants to healthy plants in the vicinity.

#### HOST RANGE.

A knowledge of the host range of each virus is also necessary if control measures are to be intelligently applied. A virus such as the one causing French bean mosaic which only attacks French beans is not a potential danger to runner beans or other crops. But, at the other extreme, hundreds of different species of plants belonging to many families of both Mono- and Di-cotyledons are susceptible to tomato

spotted wilt virus. Not infrequently, as in most of the legume and brassica viruses, a virus is able to attack plants belonging to one family only.

Particular attention should be given to hosts on which a virus is liable to over-winter :—Spinach beet, for instance, which is often the winter host for cucumber mosaic virus ; arum lilies, chrysanthemums, and dahlias under glass which harbour the tomato spotted wilt virus and lead to infection of young tomato plants in the spring. It is only by the elimination of all such infected plants that outbreaks can be prevented in the spring. Further details are given as to these allotment host plants in the accompanying table.

The preceding account emphasises what was said at the commencement, namely that the individual allotment holder can do little towards controlling the virus diseases on his own plot if his neighbours neglect theirs. Satisfactory control of virus diseases in a group of allotments can only be achieved by a joint effort in which every allotment holder is willing to co-operate.

#### COMMON VIRUSES OF THE KEW ALLOTMENTS.

<i>Transmitted by Aphids.</i>	<i>Hosts.</i>
Cucumber mosaic virus ... (also seed transmitted) ...	Vegetable marrow and frame cucumbers, tomato (causing "fern leaf"), various lilies, and many other plants. Commonly over-winters in spinach beet.
Cauliflower mosaic virus ...	Various brassicas (not radish). Over-winters in sprouting brocoli and, especially, cottager's kale.
Lettuce mosaic virus ... (also seed transmitted)	Lettuce, groundsel, pea, sweet-pea (in the last two hosts is one of the causes of Streak Disease).
Pea mosaic virus ... ..	Pea, sweet-pea (causing "flower breaking"), broad bean, red clover.
Pea enation mosaic virus ...	Pea, sweet-pea, broad bean. Causes leafy outgrowths ("enations") on the under-sides of the leaves.
Bean mosaic virus ... (also seed transmitted)	French beans (dwarf and climbing varieties.)

#### *Transmitted by the Onion Thrips* (*"Thrips tabaci"*)

Tomato spotted wilt virus...	Tomato and many other plants. Over-winters under glass on arum ( <i>Richardia</i> ), cineraria, dahlia, etc.; outdoors on chrysanthemum, etc.
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#### AS OTHERS SEE US.

#### THE ROSES IN KEW GARDENS.

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While the pressure of work in a combat theatre does not permit much relaxation, it cannot entirely crowd thoughts of roses from my mind. As I travel across the English countryside, on army business in a jeep, I am always watching for the lovely little cottage gardens that are so frequent here. Each of these has its climber or two and a path is usually bordered with roses on standards. From the cool moist

climate they attain a size and brilliance of colour such as we never see under the burning sun of our country except in the Pacific Northwest.

To avoid going stale I took a day off from work recently, my first "off" day since reaching the European Theatre of Operations nearly two months ago, and visited Kew Gardens, just outside London.

I found Kew Gardens virtually untouched by the war raging just outside. Visitors wandered about enjoying the spacious park with its fine collections. While the manpower shortage may have prevented the perfect maintenance of peace years, the beds were free of weeds and well cultivated. The rose bushes had been carefully pruned and the foliage was in perfect condition although, as far as I could detect, there were no signs that the plants had been sprayed. There was no mildew at all and I found only one minor case of blackspot in the entire garden. Even the magnificent collection of species in the far corner of the huge park was well cultivated and the plants had been freshly labelled. Indeed it would have been possible to enjoy the roses and dream that all was at peace with the world if a group of Fortresses in formation had not flown directly over the garden on their way home from a daily bombing of enemy targets.

The main rose garden occupies a semi-circular area directly behind the palm house. The garden is bordered with a 6-foot hedge of holly and pillars of the same holly form accents to separate the beds along the semi-circular walk at the end of the garden. The garden is in two levels separated by a low fence of ivy. The upper level is devoted to hybrid teas, principally of the older standard varieties, with hybrid perpetuals occupying the beds to the rear along the walk near the holly hedge. Each variety has its own bed, the beds being more or less circular in shape and varying in sizes up to about 25 feet across. At the time of my visit the hybrid perpetuals were in their glory but most of the hybrid teas had not yet reached their peak, although a few early varieties such as Talisman were almost past. There was a fine circular bed of Ophelia with a brilliance of colour such as I have never seen before in this grand lady. If all beds of Ophelia were as fine, there would have been no point in disseminating Mme Butterfly, which was not yet in bloom in a nearby bed. Mme Caroline Testout, Hortulanus Budde, Betty Uprichard and Cynthia Forde were other old-timers to be seen here in fine array as if to prove that a rose does not have to be new to be excellent. I thought I saw a bed of our American Radiance but it proved to be Mrs. Wakefield Christie-Miller, which under English conditions resembles Radiance in colour but is more double.

Among the newer roses there were fine beds of Christopher Stone and Ellen Willmott. Mrs. Pierre S. du Pont was a mass of bloom and a deeper gold than I had seen before. There was a small bed of The Doctor and the blooms were huge, perfect and very fragrant. The bushes were strong growing, something which does not always occur with this variety in the States. It would have warmed the heart of Dr. McFarland to watch the visitors exclaim over The Doctor.

A few climbers and some of the stronger-growing hybrid perpetuals and hybrid teas were given a treatment at Kew which produced low

beds and solid masses of bloom. In circular beds about 25 feet across the bushes were planted about four to five feet apart. As the sturdy canes grew they were held horizontal by tying to stakes or other canes. These canes crisscrossed the bed about two feet above the ground and the plants thus treated were in bloom along the entire length of the canes. Varieties being grown in this way at Kew are Mrs. John Laing, Lady Waterloo, Mme Isaac Pereire, Gustave Regis and others. This suggests a simple treatment for climbers in our public parks and removes the objection of height in some of the rampant hybrid perpetuals.

BY W. L. AYRES, *Operational Section, 8th Air Force,*  
*in the American Rose Society Magazine.*

## THE WORK OF AN ASSISTANT HORTICULTURAL ADVISER.

By Constance Bell, B.Sc.

“ I’m sure the speaker has given us a most interesting talk, but unfortunately as I’m deaf I could not hear a word.” This was a vote of thanks given to me after a meeting, one of the more humorous but nevertheless trying occasions in the course of my work in the above capacity.

Dorset is primarily a rural and therefore an agricultural county. It can be roughly divided into three chief regions by the nature of its soil, namely (1) a wide chalk band running through the centre of the county north to south, (2) an area of sandy heath running to a sandy loam in the eastern part of the county, this being a ring of rather poor soils on which are situated a large proportion of the commercial horticultural holdings of the county (owing to Bournemouth serving as a ready market for the produce), and (3) an area of clays and loams in the west, famous for its dairy cows, pastures and cider orchards. Another and minor feature is the series of watercress beds situated where the greensands and chalk meet. Although, as explained, horticulture is concentrated mainly in the east, there are a number of holdings on the outskirts of every borough in the county.

At the beginning of the war the Agricultural Organiser became the Executive Officer and most of the County Council Staff including the Horticultural Instructor were seconded to the W.A.E.C., which means that all the horticultural work in the county is carried out by a small staff and ranges from inspection to education both in commercial and domestic food production.

The work can be divided into the following divisions :—

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|------------------|----|---|
| (1) Education    | .. | General advice<br>Lectures, etc.<br>Demonstrations                                |
| (2) General work | .. | Committee work<br>Inspections of market gardens<br>Labour<br>Services<br>Supplies |
| (3) Office work  | .. | Correspondence and enquiries<br>Records   |

These three branches of work may be explained as follows :—

1.—*Education.* One of the most important aspects of the work of the Horticultural Staff is to make known technical knowledge and any new discoveries and methods that may be of benefit to the growers of the county. This is done by individual visits or by lecturing to Growers' Clubs, N.F.U. Meetings, Village Produce Associations, Young Farmers' Clubs and Women's Institutes. In recent years these talks have been supplemented by lantern lectures, film shows and, of course, Brains Trusts and Quizzes, both of these latter having proved particularly valuable in getting important information over in a digestible style. I have played the part of member of the Brains Trust and Question Master and enjoyed both.

The "Produce Guild" section of the W.I. caters for those especially interested in any form of food production, and part of my job as well as giving lectures is to sit on the Agricultural Sub-Committee and Produce Guild Committee of the W.I. County Garden Produce Committees have been set up in most counties of England during the war and their function is to form Village Produce Associations in every village and town in the county in order to help increase the amount of food produced in rural areas and make them as self supporting as possible in vegetables, fruit and small livestock. Members of the Horticultural Staff sit on the County Committee and also give lectures and demonstrations on pruning, pests, diseases, etc. Outdoor demonstrations in allotments and gardens with the owners present to discuss points of cultivation with the demonstrators are very helpful and more satisfactory to the demonstrator and onlooker. The Horticultural Staff also judge and co-judge at the many Red Cross and other vegetable and flower shows and co-operate with the County Garden Produce Committee in the judging of the Ministry of Agriculture's Certificate of Merit Scheme. Any allotment holder or gardener cultivating 20 or less rods of land is eligible to enter this scheme, the garden being judged for the standard of cultivation, cleanliness and planning for a continuous supply of vegetables. It has been found that the competitor very often makes an effort to be present when the judging is in progress so that he can be given any advice necessary, and we often find when we next visit that the advice has been carried out. Last winter a series of lectures on vegetable growing was given to the Women's Land Army and proficiency tests for W.L.A. members are being run in various parts of the county.

The Horticultural Sub-Committee have run a series of demonstrations on horticultural practice which have proved very successful. The principal subjects have been intensive crop-production, late greens, tomatoes under glass, with special reference to producing good crops in unsuitable houses, disease and pest control. The demonstrations have been on holdings of all sizes from 3 to 300 acres. One of the most significant points arising from these demonstrations is the willingness of growers to co-operate with their fellows and show them their methods. After one demonstration a grower told us he spent a large part of the next few days in answering questions about a piece of machinery the use of which he had demonstrated.

Three demonstrations may be cited as examples of outstanding interest : (1) a smallholding of 3 acres whose owner evolved a successful technique for growing tomatoes under Dutch lights ; (2) a well-known private garden turned over for food production for the war effort ; (3) a Machinery and Apparatus exhibition. This was a herculean affair at which were displayed as many types of horticultural machinery as we could obtain—ranging from planting machines to a small tractor and from a piece of muslin for dusting tomatoes to a power sprayer. The only land we could find for this was 12 acres of very sandy heath which made the workers pitch black. At the end of the day's preparation rain came and damped the ground but it fortunately stopped in time for the demonstration and left us a nearly perfect surface. During this winter we are concentrating our demonstrations on the thinning and spraying of orchards, a branch of horticulture where there is room for improvement.

2.—*General Work.* Under the direction of the W.A.E.C. Horticultural Sub-Committee the horticultural staff administers the cropping orders necessary in war-time, makes visits in connection with it accompanied by Committee members and makes other visits in connection with machinery and labour supplies. With the shortage of so many commodities it is necessary to see that those for which there is a great demand should go to the places where they are most needed.

A side of our work that is becoming increasingly important in war-time is the provision of "services" to the grower, by which we mean labour (*e.g.*, Land Army girls, Prisoners or schoolboys), or the loaning of tractors, spraying machines, etc., which are hired from the W.A.E.C. In Dorset the Committee owns several 2-4 wheeled tractors which can be hired out by the day or the week to growers for a small sum, the Committee supplying transport, driver and petrol coupons and the grower purchasing the petrol. Dust guns and sprayers are also available. The chief difficulty is transport and seeing that the right machine arrives in the right place at the right moment, no easy task in these days of short labour and lack of transport. In co-operation with the Women's Land Army, gangs of girls have been formed to carry out seasonal operations for growers and farmers. In connection with the work in orchards the Committee now have three power sprayers worked by a foreman and gang of these girls. This gang spray when weather permits and thin and prune trees when spraying cannot be carried out.

A steam boiler has also been ordered so that it can be hired out with a boiler man to market growers to sterilise glasshouse soils on smallholdings.

We also assist with the provision of "Supplies," issuing permits by which growers can obtain fertilisers, steel, timber or other things which are in short supply.

3.—*Office and Clerical Work.* Under this heading I include all the office routine, queries by post, telephone or personal calls. One can know the season of the year by the nature of the query. Apple identification is at its height now, to be followed by potato scab (very prevalent



on chalk soils). Fertiliser queries then arise to be succeeded by flea beetle, cabbage root maggot, gooseberry mildew, potato blight, apple scab and round again to identification.

From the office also circulars are sent out to growers in connection with crops, orders, fertilisers and other matters.

This article will, I hope, give an idea of the scope of the work of a small horticultural staff in a southern county. It varies of course from county to county. I like my job and enjoy the life and have come to the conclusion that I must be ready to deal with anything from providing a recipe for killing *Algae* in ponds to steam soil sterilisation of a large greenhouse, or from supplying a recipe for slug bait to arranging a large meeting.

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## WOMEN GARDENERS AT KEW DURING THE WAR OF 1914-18.

By Lucy H. Joshua, N.D.H.

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Ever since I left Kew in October, 1918, I have thought of writing an account of my own activities there and those of other women gardeners during the first world war. Now the Jubilee number of the *Guild Journal* (1943) gives me an excuse. The subject of the "Women Gardener movement" is referred to on p. 223, but so cursorily, if I may say so, that I feel I must try and put together a picture of our life and mutual experiences in the Gardens. Readers will pardon me if I have to write a good deal about myself, but naturally one remembers best what one actually did and saw.

First, to go back to a time of which I have no personal experience—the incursion which began in 1896. Those pioneers suffered from the disability of having to dress as garden boys in jackets and knickers. Why the latter garments were considered more respectable than skirts I never could think. But I'm sure these women did good work—they would not have taken the job if they were not enthusiasts. Of those whom I knew, Gertrude Cope and Edna Gunnell still take an active part in Horticulture. Ena Powell had an excellent business in London till her health gave way and she died a few years ago, and Alice Hutchings (Mrs. Patterson) died in 1944. The other four are known to me only by name.

Now comes the period with which I was so happily associated. The first women came (I believe) in June, 1915, and I joined them towards the end of August, feeling at once at home in the company of old Swanley friends, Macintyre, Stubington, Champion, Taylor, Merryweather and Allen, all well-trained women, keen and fond of their work.

I was lucky, as after my two years' training at Swanley I had a year's experience in charge of part of the College grounds, followed by two years in Switzerland as Head Gardener and lecturer at a small gardening school. At the end of my first year the war came, and apart from travelling difficulties I felt I should not throw up the job. But by

1915 it was different. I wrote to Miss Wilkinson (Principal of Swanley) and heard by return that Kew was taking women. I got to London in August, reported to the Curator, Mr. W. Watson, and joined the gang working in the Herbaceous ground.

It was dull work, trimming edges and helping to push round a heavy and very lop-sided mower (the poor thing had been accustomed to having a douche of cold water instead of an oil can and a few feathers), but we felt it was war work and kept cheerful. During these weeks of outdoor work we gained an amusing insight into the attitude towards us of the great "British public," less used than people are now to seeing women taking the place of men. We had to put up with just the same sort of questions that Mrs. Cooper described in the *Journal* for 1941. I hardly felt up to the sentiments expressed by a gushing lady who after watching us laboriously pushing the mowing machine on a hot day, remarked: "What a *privilege* to work in such lovely gardens and to take the place of the dear boys at the Front."

In October the Curator, Mr. Watson, told us we were doing well and that he had arranged four openings for us under glass. We swallowed the flattery and four of us volunteered, namely, D. Champion, V. Bell, R. A. Davies (Mrs. Bysouth) and myself. I was able to say that I had learnt my plant-house work from a Kew man, A. E. Aubrey, and was sent to the Tropical Seed Pits and that was the beginning, for me, of three happy and interesting years.

As time passed and more men left, more women went under glass. There were always two in No. 4, others in the Decorative Pits, Orchids and Ferneries and the alpine yard deputy was M. E. Merryweather, followed by E. M. Stubington, V. S. Bell, R. Hart and N. Robshaw, as far as I remember. I think we took part in all Departments of the Gardens except the Palm House. The Decorative Department was for a time run almost entirely by women, so much so that it received the name of "Coutts' harem."

In the Tropical Pits I was under Mr. T. W. Taylor and I have never worked under anyone who was more sympathetic and helpful. He started by trusting people, and it was seldom that his trust was misplaced. He soon found out that I was keen on propagation, and would often say: "Come along, give me a hand with these cuttings." Thus I learned a great deal. At first the women workers met with some suspicion from the men, but when we had shown them that we were prepared to do our full share of work, including fumigating, the ice was broken and there was real comradeship.

I laugh now when I think of the excitement in the Melon Yar when one day it was known that a woman was fumigating in the pits. Mr. Taylor came rushing in to make sure I was all right and not overcome by smoke. (Those were the old days of tobacco paper and shreds.) I was certainly the first woman to tackle this job at Kew and I believe I am the only one who has helped to fumigate the Temperate House.

Until July, 1916, I stayed happily in the Tropical Pits. Then I heard that Mr. Watson wanted women for the Temperate House Pits. Mr. Taylor didn't want me to change, but said he would like me to have the experience. After a talk with Mr. Watson, the matter was settled

and I was put in charge. So I started on 27 months' work as subforewoman under Mr. Lavender. It was enormously interesting, but tiring, as apart from the long walk each way, I had to do duty every other week-end, and do my own stoking. I had only one partly trained assistant (instead of an experienced gardener and a boy). Before long, Robshaw and A. Freda came to work nearby, namely, in the Arboretum Nursery and we had a good deal in common.

After a time we began to agitate for ground for growing vegetables, as the need for more food was as acute in that war as it is in this. We approached Mr. Watson, but he had no suggestion to make. Sir David Prain was most sympathetic. He said "yes," and that he thought he could perhaps get us some ground off Mortlake Road adjoining the hutments of the newly-formed Ministry of Pensions where the Pathological Laboratory already had some land for experiments. He was as good as his word and we got the ground. A committee was formed consisting of Mr. Osborn, Mr. Cotton and D. Halkerston and another gardener and myself. The allotment-holders were each entitled to five rods, the foremen joined us (I think they had ten rods) and we had to agree to put half down to potatoes and allow them to be sprayed. They were to be part of Mr. Cotton's spraying experiments. As it was late in the season we had to buy our potato "seed" locally and it was not successful. The following year we decided to get Scottish "seed" and to our joy Mr. Coutts added our order to the official demand which was needed for planting the ground in front of the Palace.

Those were the days when the true significance of northern "seed" was not realised, namely, that the beneficial affect of the cool Scottish climate was not in producing so-called "undermature seed" but in keeping down Aphis attacks, thus preventing the spread of Virus diseases. We were glad to hear that some Kew experiments carried out later had a large share in demonstrating this fact.

The allotment plots were a busy scene on week-day evenings and Saturdays, and "Summer Time" which was a great novelty, was a real help. Our crops on the whole were very good and they certainly helped our commissariat, as, in the absence of the wonderful present-day rationing scheme, the food shortage was at times very real. If anyone was found wasting their produce, the Committee had the right to confiscate it and send it to the Richmond Hospital.

The exact number of women working at Kew varied of course, but in 1917 there were, I believe, 31 (four sub-forewomen and 27 gardeners). Though we were a united body we did not form a Women's Guild, but joined with the men when any matters connected with work cropped up, and in that way we may have helped to get some useful concessions. We were invited to join the Mutual Improvement Society and the Chairman, Mr. Coutts suggested that it would be a good thing for one of us to give a talk on our past training. I was chosen for the job and on November 9th, 1915, I read a paper on "Women in Horticulture." Mr. Watson (who had rather objected to the idea and didn't come to the meeting) asked to see my notes. He sent them to the *Gardeners' Chronicle* and they were published! The following winter Miss Yeo was Secretary of the Mutual and I filled that post for 1917-18. Other

women who read papers were D. M. Champion, E. M. Merryweather, V. S. Bell, A. Hutchings, M. L. Yeo, V. M. Harvey, R. M. Williams and D. A. L. Boswell. I think on the whole we gave a good account of ourselves and I shall always treasure the copy of Mr. Bean's *Trees and Shrubs* which I got as the Hooker prize.

One of the features of our time at Kew which was specially appreciated was the opportunity of becoming personally acquainted with the members of the permanent Kew staff most of whom were already very well known to us by name. This naturally varied with the departments in which we worked and the number of changes which we had whilst at Kew. In those days Mr. Bean was Assistant Curator, Mr. Irving was Head of the Herbaceous and Alpine Department, Mr. Coultts was Head of the Decorative Department and Mr. Osborn, Head of the Arboretum. Mr. Lavender was Acting Head of the Temperate House and Mr. Taylor was in charge of the Tropical Department.

Mr. and Mrs. Coultts took upon themselves the job of looking after the welfare of the Women Gardeners, a kindness which was especially appreciated when one first came to Kew and everything was new and strange. Mr. Dallimore also was extremely helpful and, though always very busy, spared a number of summer evenings for taking us on tours of the Gardens. The late Miss Matilda Smith, artist for the *Botanical Magazine*, kindly welcomed us to her house and let us have the use of her drawing room for our sewing parties on behalf of soldiers and sailors.

In October, 1918, I left and my Swanley and Kew testimonials got me good posts, first with Lady Warwick and then as propagator to Messrs. Wallace now of Tunbridge Wells but then of Colchester. After that I was called back to take charge of the Plant Houses and Flower Garden at my old College, and there I remained until I had to give up full-time gardening. But my interest remains and I bless the days when I went to Swanley and then to Kew.

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## WAR-TIME PRODUCTION OF RUBBER IN TANGANYIKA.

By F. M. Rogers, O.B.E., A.H.R.H.S.

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In May, 1942, I left the East African Agricultural Research Station, Amani, with instructions from the Government of Tanganyika Territory to take up rubber production duties. Headquarters for this work were established at the Mlingano Sisal Experimental Station, Ngomeni, which is 28 miles from Amani and 20 miles from Tanga on the main Amani-Tanga Road. At this time almost all the rubber estates were neglected and had become a mass of bush, much of it of a thorny type, inhabited only by lions, wild pig and vermin. Roads which had previously existed, had become so overgrown that it was difficult to follow their direction. The lack of office materials, tools and transport also added to the many difficulties. A rapid survey of the rubber areas was immediately undertaken. Work commenced on few estates only, but

it was soon evident that with no camps and no local labour available, more rapid progress could be made by opening up the estates situated in populated areas. By the end of June this was in full swing.

In July, 1942, the Government appointed Messrs. Jardine Matheson & Co. as agents for the production of rubber for the whole of Tanganyika. From this moment it was evident that the organisation needed would be on a much larger scale than was imagined, and a "return" of all rubber estates in the Territory was asked for from plantation owners. From these returns, which although at the time were far from complete, it was decided to divide the rubber areas of Tanganyika into four groups. These now consist of :—Group I, 40 estates ; Group II, 40 estates ; Group III, 6 estates ; and Group IV, 21 estates.

It must be realised that having more than one hundred estates untouched for the past 20 years, with no trained staff and an acute shortage of labour and transport, the problem was a difficult one. After a while however contact was made with some of the rubber planters who had escaped from Java and Malaya. These men came forward to take charge of the groups and divisions while plantation assistants composed of Greeks, Seychellese, Indians and Goans were collected from all parts. The rubber production organisation expanded month by month and now employs many hands, namely :—

- 20 British
- 10 Greeks
- 15 Seychellese
- 12 other nationalities
- 14,000 natives.

#### CEARA RUBBER.

In Tanganyika practically all the rubber estates are planted with *Ceara Glaziovii*, and small areas only with *Hevea Brasiliensis*. The old stab tapping system of producing strip rubber was first tried but owing to the large amount of damage, followed by disease, attacks by termites, and the inferior type of rubber produced, experiments were carried out on tapping the Ceara tree on the Malayan spiral system. Opinions of the Malayan planters were at first divided, but later it was found that the full, or half spiral system of tapping was possible. This change over from the old stab tapping involved great changes in practice but an increase of 150 per cent. in the output of rubber was brought about and a corresponding increase in labour and materials was required. For example, treble the number of rollers were required, thousands of buckets or petrol tins, five million spouts, five million coconut shells, a few thousand tapping knives and hones, numbers of coagulating tanks of all sizes, bulking tanks for latex and water, tin containers for the transport of coagulum, and above all, many more labourers before the maximum output could be reached. This state of affairs has not been fully reached yet, but the organisation today is such, that given the requisite amount of labour, full production in all the old Ceara plantations can immediately be obtained.

One must not, however, get the idea that Tanganyika with its Ceara plantations is or ever will become a rubber producing territory on a big

scale, or that the present production is anything more than a war-time effort; nevertheless, working with the idea that "every little helps" our efforts have not been in vain and the quality of the product now being produced has created a good impression with the rubber manufacturing companies to whom it has been despatched.

#### WILD RUBBER.

The collection of wild rubber is also carried out by natives in many areas of Tanganyika Territory. The chief source of this wild rubber is from the rubber vines of *Llandolphia* spp. Much of this was collected in ball form but owing to the high percentage of extraneous matter present, it was found desirable to produce the rubber in thin strips. For this purpose a wild rubber tapping school was opened and natives from all parts have been trained in the production of a much improved product in rubber strips.

At the time of writing, however, the collection of wild rubber is held up on account of the increased food production campaign.

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#### THE FEBRUARY BLITZ.

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Kew suffered damage during the week of raids at the end of February, 1944, which though sharp seldom lasted long. The barrage was much more intensive than three years earlier and the damage from shrapnel from our own shells was greater and inflicted some damage to the houses. On the night of Wednesday, February 23 sleeves of rocket guns, 3ft. long and 3in. across, with jagged ends, fell in the Gardens—one into the Palm House, two into the Ferneries and one just outside the Herbarium. About 30 others were picked up later in the grounds and dumped in the Curator's Office yard.

The worst night was Thursday, Feb. 24, shortly before midnight. Showers of incendiaries fell in a broad band stretching from the corner of the Bridge along the north side of Kew Green towards the Palace. Many were "duds" but many others burst into flames and lit up the Green. There were two on the Herbarium roof (both duds) and many all around, one penetrating the Poison Chamber, burning itself out, another on the car shed destroying Mr. Atkinson's car. Part of the "Boathouse" was set on fire and some time after the roof of Ebor House at the corner of Ferry Lane also flared up and blazed away for an hour. Fires at two little houses next Pitts restaurant were promptly dealt with and extinguished.

Much more serious was the damage in the Gardens. Three large H.E.'s fell near the Stables in the Arboretum, one of these wrecking the houses occupied by Messrs. Hatcher and Tunks. Though members of both families were in the houses at the time fortunately none of them received more than scratches, and the horses, though much frightened, also escaped injury. There was another crater further out near the three fine specimens of *Nothofagus obliqua*, each of which had its bark damaged, one so badly that it had to be taken

down. A third bomb struck a large beech and apparently burst in the air flinging the branches in all directions. Other trees were damaged and glass was broken in the Arboretum and Temperate House pits. The old stone seat was also smashed.

The Temperate House, which for the third time during the war lost much of its glass, was a sorry sight. Hardly a whole pane of the vertical glass remained unbroken. Many plants were destroyed, mostly by falling glass, and those that escaped suffered considerably during the next few weeks through night frosts and cold winds. For a whole week men were at work clearing the borders and pots which were liberally "top-dressed" with glass from one end of the house to the other, pieces often being so small that they could not be satisfactorily removed. Canvas was hastily put up along the sides of the house pending the work of re-glazing. For about a week after this raid the Gardens were closed on account of five unexploded bombs which had to be removed by the bomb-disposal squads. For 5 or 6 weeks labour from the Arboretum had to be diverted in order to remove damaged trees, clear up debris or replant vacant sites where urgently necessary.

A.D.C.

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### ODE TO A VICTORIAN URN.

(On a corner of the Temperate House.)

With profound apologies to the shade of John Keats.

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Thou still unravelled riddle of the past,  
 Confounding problem of the plastic art,  
 Symbolic mould, in strangest fancy cast,  
 What gems of plant-lore hast thou to impart?  
 What leaf-fringed legend haunts about thy shape  
 Of Monocots. and Dicots.? Who knows what  
 Can be the meaning of lions' heads and feet?  
 What signify these fruits, the fig, the grape,  
 The Indian corn, and all this medley lot  
 Of vegetation on thy summit set?

Known genera are sweet, but those unknown  
 Are sweeter; therefore, let us botanise  
 Among these specimens portrayed in stone,  
 To see how many we can recognise.  
 Cucumis, Vitis, Zea here are found  
 With Mespilus and Scolopendrium;  
 Ananas, Ficus, Rosa crown thy head.  
 Acanthus leaves thine ample base surround  
 Alternately with—is it Lilium?  
 No, something rarer far, gen. nov. inc. sed.

Who can have modelled for us this rich prize?  
 To what green flora, O mysterious flower  
 Dost thou belong, beneath what foreign skies  
 Drew nurture from the sunshine and the shower?  
 What little plot by river or sea-shore  
 Or mountain-closed botanic sanctuary  
 Evolved and brought to bloom so rare a find?  
 Ah! little plot, thou must for evermore  
 Remain unknown, where none thy wealth shall see,  
 In some far province of the sculptor's mind.

Erratic shape! Rich platitude in clay  
 With luscious imagery overwrought,  
 Effusive product of a former day  
 Thou, silent form, yet furnish'st food for thought.  
 For he who looks on this pomposity  
 Sees effort and material gone to waste,  
 Which had been better used in brick and tile  
 Than this; whilst thou to him and all men say'st  
 "Truth is not so, whatever it may be—  
 This is beauty's stigma, not her style!"

J. SOUSTER.

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### KEW SEVENTY YEARS AGO.

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The Director recently received a packet of photographs showing Kew as it was 70 or more years ago. They were presented by a former resident, Mr. A. E. Rayden. Four have been selected for reproduction. The photographs were very badly faded, but have been skilfully restored and re-photographed by Mr. Atkinson.

- No. 1. This is of interest in showing the row of Horse Chestnuts on the South side of the Green when they were young. Some houses in the foreground will also be recognised by Kewites such as the present day "Maison Vanda" (before it had a shop front) and "The Nook."
- No. 2. Here the Dutch House or Palace is seen before the portico was removed. A large tree stood in the garden of the house which in later years became the official residence of the Clerk of the Works.
- No. 3. This is the most interesting of the four. It shows the house which stood between the present "Stores" and the Herbarium and also the Lodge in front of the Herbarium. This is the only illustration known to us of the Lodge and it clearly indicates that it was not built at the same time as the herbarium house, but at a much later date. It is of the same style as the lodges seen to-day outside Royal residences and at the gates of the Royal Parks, and was no doubt built when George III's son, Prince Ernest of Cumberland, who later became King of Hanover, resided



in the house itself. It will be observed that there are large trees outside the Herbarium, possibly an Elm and an Evergreen Oak. No. 4. The north-west corner of the Green. The little house between the Imperial Restaurant and the Dieudonné Restaurant is now pulled down as is also the large Elm tree in the road.

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### AUTUMN COLOUR.

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The wonderful colour displayed by the many trees in autumn always attracts attention and enquiries as to the cause are often asked by successive relays of students. Much has been written on the subject and in a general way it is well understood. An excellent outline by Dr. Salisbury is given in *The Living Garden* (Ed. 1, pp. 199, 262; Ed. 2, pp. 133, 176).

For those who require more details, the account by Donald Wyman published in *Arnoldia* (the Popular Information Bulletin issued by the Arnold Arboretum) may be recommended (Vol. 4, No. 5). It is an eight-page pamphlet and deals not only with the causes of the phenomena but provides lists of trees and shrubs arranged according to their autumn-colour changes. Some paragraphs regarding red autumn colour are written so simply and forcibly that they are quoted below (with slight modification of names to suit English readers).

“The gorgeous beauty of most autumn colour combinations results from the brilliant reds and scarlets, together with the yellows. The sassafras, some of the maples, oaks, sumacs, *Oxydendron*, *Nyssa*, and other plants are particularly outstanding for their brilliant red autumn colour. These plants are most interesting in that the brilliance of their colour apparently varies from year to year. The red in their leaves is caused by a third pigment called anthocyanin, which results in some way from the accumulation of sugars and tannins in the leaf. In some of the maples valued for their sugar production, it is probably the sugars which cause this red colour. The oaks, however, being rich in tannins, probably owe their high autumn colouration to the presence of these.

“There are two factors necessary in the production of red autumn colour. The first is light. There must be warm, bright, sunny days in the fall, during which time the leaves naturally manufacture a great deal of sugar. Secondly, such days must be followed by cool nights, during which the temperature is below 45°F. Plant physiologists have shown that, under such conditions, there is little or no translocation of sugars and other materials from the leaf to other parts of the plant. In other words, when cool nights occur, following warm, bright, sunny days, sugars and other materials are ‘trapped’ in the leaves. The accumulation of these products results in the manufacture of the red anthocyanin.

“The combination of these factors is well understood when one observes a certain tree that may be red only on that side exposed to the sun. Other leaves not directly in the sun’s rays may be green or

yellow. Leaves exposed to the sun have been able to manufacture more sugars, which when accumulated and 'trapped' in the leaves by cold night-temperatures may result in the red colour. It is interesting to note that trees and shrubs growing in swamps and other low places are often among the first to colour in the fall, simply because it is in such places that cold air first settles on still nights." H.S.M.

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## KEW GUILD JUBILEE PERMANENT SECURITY FUND.

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### SECOND LIST.

	£	s.	d.		£	s.	d.
Balance from 1943 a/c	247	5	7	Mrs. C. E. Lovelock			
1944 :				E. A. Braybon	1	0	0
R. O. Williams	5	0	0	Mrs. Macdermott and			
F. M. MacCartney	10	0	0	Miss Golding	1	1	0
G. Urton	2	0	0	K. E. Toms	5	0	0
C. Jones	1	0	0	B. B. Wass...	5	0	0
G. R. Groves	3	0	0	W. H. Judd	1	4	8
C. R. Metcalf	16	0	0	J. Ellis	1	4	8
J. Nelson	10	6	0	F. K. Sander	5	5	0
H. A. Cossom	15	0	0	F. A. Heath	2	6	0
W. Dallimore	2	0	0	J. Robbie	5	0	0
H. W. Sayer	1	1	0	W. J. Newberry	19	0	0
H. Williams	5	0	0	L. B. Creasey	1	1	0
H. B. Tindall	10	0	0	Miss A. M. Macintyre	2	0	0
R. K. Mowforth	7	0	0	G. W. J. Ford	17	0	0
T. H. Candler	1	15	0				
T. A. Summerfield	5	0	0		£295	11	11
H. R. Cocker	2	2	0				
D. V. Wells	1	0	0				

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# In Memoriam.

LUDWIG BAUMANN.

We learn with regret of the death of Mr. Ludwig Baumann on February 17, 1944, in St. John's Hospital, St. Louis, U.S.A., from pneumonia after a short illness.

Mr. Baumann, a native of Germany, was born in October, 1876, and came to Kew in April, 1901, from Messrs. James Veitch & Sons, of Chelsea, having previously had experience of gardening in the Royal Garden at Potsdam. He left Kew in March, 1902, and went to St. Louis in 1904 where he built a garden in front of the German Building at the Louisiana Purchase Exposition. He became a prominent horticulturist in St. Louis, winning many awards in flower and garden shows, and was himself chief organiser of the Annual Flower Show. As City Forester of St. Louis, Baumann was responsible for the care and maintenance of 250,000 city trees and had been employed in this capacity by the city authorities since 1933.

Tree planting formed an important part of Mr. Baumann's duties and his services to the city in this respect were so valuable that his tenure of office was unaffected by the political change of 1941.

His wife, two step-daughters and a son by a former marriage, who was on duty with the U.S. Navy in the Pacific at the time of his death, survive him.

— H. S. MARSHALL.

JOHN W. BESANT, A.H.R.H.S.

The passing of our late president, Mr. John Besant, came as a great shock to all Kewites at home and overseas. A notice of his life appeared in the last Number of the *Journal* so no detailed account is necessary, but as I so recently visited Ireland and enjoyed his company I cannot resist writing a few lines of appreciation.

In July, 1943, I had the pleasure of spending about 5 days at Glasnevin and going through the collections of plants at the Botanic Gardens with Mr. Besant. He had not long recovered from a very serious operation and it was evident that the daily routine was placing a tremendous strain upon him, but in spite of this he was very cheerful and keenly interested in his plants and also in everything that appertained to Kew and the many friends he had made there.

The standard of maintenance of the Gardens was excellent, and both under glass and out of doors there was every evidence of Mr. Besant's horticultural skill and experience. Despite the extent and numbers of the plants throughout the Gardens (and they rank as one of the finest collections in the world), Mr. Besant seemed acquainted with them all, and knew their botanical characters and cultural requirements. It was not until I had paid this visit that I fully appreciated his wonderful knowledge of plants and how good a plantsman he was.

The result of his excellent taste showed itself in the fine herbaceous border and the magnificent displays of bedding and decorative plants. The herbaceous border I well remember as one of the high-lights of the good things seen during a tour of some Irish gardens.

As one acquainted with the onerous duties of a responsible position I can only express my amazement that it was possible for Mr. Besant to have carried out his duties so successfully for over 22 years without an assistant. He will be greatly missed in horticultural circles, not only throughout Ireland but in this country, especially for his excellent writings which appeared regularly in *The Gardeners' Chronicle*, and also for the invaluable work which he put in as an examiner to the Institute of Park Administration.

W. M. CAMPBELL.

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ALICE HUTCHINGS (MRS. W. H. PATTERSON).

Alice Hutchings entered Kew in 1895, being one of the first women to be employed as an "Improver" in the Gardens. She started her gardening career by gaining a Kent County Council Scholarship to Swanley Horticultural College, and obtained the College Diploma at the end of the two years' course.

At that time the Swanley Council persuaded the then Director of Kew, Sir W. Thiselton-Dyer, to try the experiment of employing two Swanley Students as Improvers in the Gardens, and Miss Hutchings was one of the lucky ones to be sent by the Council, and the other was probably Miss Gulvin. She obviously "made good" as she was later appointed a sub-forewoman in the Alpine Pits under Mr. Irving, and she stayed long enough at Kew to welcome other women students, including myself, who came later. On leaving Kew, she went as gardener to Mrs. Cranfield, near Ipswich.

In 1902, Miss Hutchings married Mr. William Henry Patterson. A year after their marriage Mr. Patterson obtained a Government Post at the Agricultural School at St. Vincent in the West Indies, and his wife went out with him. They left St. Vincent in 1912, as Mr. Patterson was transferred to West Africa, being appointed Government Entomologist for the Gold Coast, a position he held for nearly 20 years.

Mrs. Patterson was keenly interested in her husband's work, and accompanied him on his numerous trekking expeditions, sometimes into native districts where no white woman had previously travelled. After his retirement from Government service Mr. Patterson helped in a C.M.S. Mission School at Kampala, Uganda. At the time of her death, which occurred on January 24, 1944, Mrs. Patterson was staying with her daughter in England. She had hoped to go out to her husband again in Uganda after the war.

GERTRUDE COPE.

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## WILLIAM HENRY JOHNS, N.D.H.

It was with deep regret that the many friends of William Henry Johns learnt of his death at Camborne, Cornwall, on November 20, 1944. He had been in failing health for some time, and on medical advice had gone to his native county for a period of rest.

Mr. Johns was born at Camborne on May 12, 1885. He commenced his career under his father at Camborne, and continued for some seven years in private gardens. A period of training in nursery work with Messrs. Hugh Low & Co., Enfield, followed. In 1907 he entered Kew and was eventually promoted sub-foreman in charge of the Temperate House under the late William Taylor. He left Kew in October, 1909, on being appointed Instructor in Horticulture to the Academy and Technical Schools at Kilmarnock. Whilst there he was associated with the Kilmarnock and Ayrshire Horticultural Society, being elected corresponding Secretary.

In 1912 he was appointed lecturer in Horticulture to the Municipal Technical Institute of Belfast after a technical examination and interview. His work there was of a very diverse nature including lectures in Horticulture for the N.D.H. During the last war he did much to encourage the Allotment movement in Belfast; from 1912 to 1916 the number of allotments increased from 300 to 3,000. Those familiar with his work at Bermondsey will not be surprised to learn that he was also active in the window-box campaign. A report prepared for the County Borough of Belfast, on the beautification of the city, included a comprehensive survey of the whole subject. He was moreover an inspector of plant diseases and pests in the Belfast area.

In 1916 Johns went to Dublin as Staff Instructor in Horticulture to the School of Gardening for Women and also undertook instructions for Teachers in County Kilkenny and County Waterford. It was in 1920 that he returned to Cornwall to take up the position of Horticultural Superintendent. In 1923 he was appointed Gardens Superintendent to the Metropolitan Borough of Bermondsey. In this crowded area, gardening was not easy, but those privileged to see his results knew that he was an enthusiast and one who had a deep love for his work. The value of his labours and untiring zeal was inestimable in the drab surroundings of Bermondsey.

Perhaps Johns will be mostly remembered by his work for the Institute of Park Administration. A founder Member of the old Association of Parks Superintendents (which was later Incorporated under the former title), he was elected a member of the first Council. The first branch to be formed was the London Branch, which was due to his initiative, and Johns became the first Secretary. He was elected Chairman for the year 1935-36. In 1932 he was elected General Secretary and was President in 1943-44. His duties as Secretary involved a tremendous amount of work, including the Incorporation, the establishment of the examinations and work in connection with the Annual Conferences. He represented the Institute on many allied organisations. His name will ever live amongst Parks Superintendents.

Johns was a Life Member of the Kew Guild and the success and prestige of Kew men in his profession owes much to his wise counsel. His thirst for knowledge was insatiable, and amongst his many awards may be mentioned the National Diploma in Horticulture, Certificates for Drawing and Art and the first prize award of the Letchworth Garden City in the open garden design competition.

Johns was a strong character and intensely serious in his beliefs. To many Kewites he will be known as the student who refused the position of sub-foreman in the Temperate House Pits as he considered this should have been offered to someone else. This was a sample of his strong principles and toward which the whole of his energies were directed. He had no use for academic qualifications which were not supported by practical experience. His was a happy blending of the practical and technical, and his high resolve and integrity must have been an inspiration to many of the younger generation. He was a fluent speaker, with a forceful manner of imparting information, which must have been the result of study as well as experience.

Despite failing health he maintained all that tenacity of purpose which had characterised his life and his enthusiasm for matters Horticultural persisted to the end.

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#### CECIL GEORGE LAST, M.M.

It is with sincere regret that we record the death on active service of Corporal C. G. Last while serving with the 6th South African Armoured Division.

Cecil George Last was born on October 12, 1910, and was educated at an elementary school at Letchworth, Herts. His first situation was with Colonel Gavin Jones, a specialist in the preparation of rock gardens, who gained not a few awards at the Chelsea shows of the R.H.S.

After serving a few years with Colonel Jones, he secured a situation with Mr. Amos Perry, of Enfield, who also specialised in rock gardens. He entered Kew as a student gardener on February 25, 1935. While at Kew he was employed in various departments, including the Tropical Pits, Palm House, Ferneries and Aroid House. Later he visited the Botanic Gardens at Goteborg, Sweden, as an exchange student for a period of one year, where he gained valuable experience.

On completing his term of study at Kew in 1938, Last made a successful application for a situation in the Parks' Department at Port Elizabeth, South Africa, and from three candidates recommended by the late Director, was selected by Mr. F. J. Cook, who made the journey from South Africa to Kew for this purpose. He landed at Port Elizabeth in December, 1938, and took up his duties as one of the technical staff under the Superintendent of Parks, Mr. F. R. Long.

Last joined the South African Medical Corps during the early days of the war, and while attached to the Cape Town Highlanders did sterling work in the Western Desert until after Alamein. For his cool efficiency and acts of bravery under fire he was awarded the Military Medal. During his second period of service in the Desert he earned the admiration of his comrades for his splendid work although wounded. (See *Journal*, 1943, pp. 243 and 252.) He met his death at Chiusi, Italy, on June 22 or 23, 1944, when, whilst under very heavy fire, he bravely attempted to bring to safety one of his native stretcher bearers who was wounded and exposed to heavy fire.

Lieut.-Col. A. V. Flemer, writing to his parents, says:—"Cecil was easily one of the best beloved members of the battalion and, as his Military Medal proved, was one of the bravest. He was killed on an act of mercy of the highest order. His spirit will long remain."

An excellent supervisor and a good plantsman, it was not long before St. George's Park, Port Elizabeth, was greatly improved as a result of his efforts, particularly as regards the flower and herbaceous gardens. He proved an expert in the art of growing tropical and hardy water lilies and was successful with all types of dahlias.

Last was extremely popular and a great favourite with the rest of the staff, due no doubt to his pleasing personality and happy disposition, coupled with his love for all plant life. On the sporting side, he was a good tennis player and a member of the Port Elizabeth Tennis Club.

We are indebted to his brother, Mr. A. V. Last, for much of the information contained in this notice.

H. S. MARSHALL.

#### ARTHUR WILLIAM MAYNARD.

We much regret to record the passing of another old Kewite in the person of Mr. A. W. Maynard, who died on October 22, 1944, from pneumonia, at Grahamstown, S. Africa.

Arthur William Maynard was born on March 11, 1890, at Chislehurst, Kent, where his father was Head Gardener to Mr. Sanderson, of Bullers Wood. He came to Kew on July 8, 1912, having had previous experience in the employ of his uncle, Mr. F. Maynard, at The Nursery, Borough Green, Kent, and later at Regent's Park.

On leaving Kew in April, 1914, he proceeded to the National Botanic Gardens at Kirstenbosch, Cape Town, afterwards going on to the Municipal Gardens, Queenstown, where he served under the late Mr. H. Holley. Later he added to his experience at Hamilton Park, Bloemfontein, Port Elizabeth and Uitenhage from whence he came to Grahamstown to take up his appointment as Curator of the Botanic Gardens in 1936, which post he held with great success until his unfortunate decease.

During the Great War of 1914-18, Maynard, who was a life member of the South African Legion (B.E.S.L.), saw active service

with the 1st South African Infantry in France, and was a prisoner of war in the hands of the Germans for nine months.

Mr. Maynard had considerable experience in all branches of horticulture. He had a wide knowledge of his profession especially with regard to orchids, landscape gardening and lawns, and had also contributed gardening notes to the *Grahamstown Daily Mail*. An energetic man of high character with a pleasing personality Maynard will be sadly missed by his many friends at Kew and in South Africa.

We extend our sincere sympathy to Mrs. Maynard and family in their sad bereavement.

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H. S. MARSHALL.

### JOHN GORDON MAYNE.

It is with sincere regret that we record the death in action of Lieut. J. G. Mayne.

John Gordon (Jack) Mayne was born on January 1, 1914, and was educated at the County High School, Altrincham, Cheshire. On leaving school he was employed by Messrs. Clibrans, Ltd., of Altrincham, for a period of five years, and afterwards in the nurseries of Messrs. Hillier & Sons, of Winchester, and Messrs. Storie Thyne & Co., of Dundee. He entered Kew in March, 1938, and was engaged in the Temperate House where he proved himself a keen and conscientious worker, while his lecture record shows that he gained distinctions in Plant Nomenclature and Elementary Systematic Botany.

Leaving Kew on July 19, 1939, Mayne came to the Ontario Agricultural College as an exchange student at the beginning of August, 1939. He joined the Canadian Officer's Training Corps Unit in October, 1940. The emergency expansion of the Unit made promotion rapid, and by June, 1941, he had attained the rank of a Company Quarter-Master Sergeant. In the meantime he had attended regularly the lecture and instructional courses offered for officer candidates, and by passing the required examinations had qualified for the rank of second-lieutenant. On August 7, 1941, he joined the active army and was commissioned as Second-Lieutenant at the Basic Training Centre at Kitchener, Ontario, where he commanded a platoon. In a few months he was promoted to Lieutenant with the Highland Light Infantry of Canada, and entered the Canadian Officers' Training Centre at Brockville, Ontario, for a three months' course of instruction. From Brockville he passed on to the advanced training centre at Camp Borden, Ontario. His course here was interrupted by an accident in a carrier which necessitated a period of treatment and recuperation in hospital. He finished his course and remained at Camp Borden until he went overseas in 1942. In England he was transferred to the 48th Highlanders of Canada and sent to Italy with that unit in 1943. Knowledge of how and when he met his death has not been received, but his name appeared in a casualty list in June, 1944, as "Killed in Action."



Mayne was resourceful and determined, and those who knew him attest to his qualities as a fighting soldier. His horticultural work at this College was characterised by the same energy and resource which he applied to his military duties. The College greenhouses were under his care and the results he achieved were to his credit.

We understand that "Jack" married in England during 1943 and leaves behind his widow and a young daughter whom he never saw. To his widow and family, those who knew him here and at Kew, will wish to extend their deepest sympathy.

J. G. TAYLOR.  
Guelph, Canada.

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#### CHARLES MCGREGOR.

We record with much regret the death of Mr. Charles McGregor at the age of 42. For over three years he had been in indifferent health, during which time he had undergone two operations. Although his death had for some time been almost expected by his friends, yet the end came suddenly on September 13, 1944.

C. McGregor was born at Dinnet, Aberdeenshire. Later he moved to Crathie, in the same county, where he was educated. He started his gardening career at Balmoral Castle, where he remained five years, and after this he spent four years at the Royal Gardens, Sandringham, Norfolk.

On June 22, 1925, he entered Kew, where he spent most of his time in the Decorative Department, being appointed sub-foreman January, 1928. He left Kew in May, 1930, to go to the south of France where he studied landscape work. In 1932 he returned to England, when he was appointed Head Gardener at Emmanuel College, Cambridge, where he remained till his death.

At Emmanuel College he was much respected and his work was greatly appreciated. He made many friends in Cambridge, evidence of which was shown at the funeral, which took place at St. Paul's Church on September 18, the Vice-Chancellor, Dr. T. S. Hele, the Master of Emmanuel College, taking part of the service. Other representatives of the College were also present, as well as some past and present Kew men. The interment took place at the Borough Cemetery, Cambridge.

McGregor was of a quiet retiring disposition. During his early days in Cambridge he enjoyed a game of cricket. He maintained his interest in Kew and always looked forward to the Kew Guild gatherings, where he met men of his Kew days.

He was married on January 10, 1942, to Miss Nellie Cambridge, and to his widow we extend our sympathy in her sad bereavement.

F. G. PRESTON.

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#### HAROLD PERCY NORMAN.

Mr. Percy Norman was born in 1888. His first appointment in horticulture was on the staff of Messrs. W. Brooks, of Whitecross Nurseries, Weston-super-Mare. He then went to Cardiff to work under Mr. W. W. Pettigrew. At that time Mr. Pettigrew was

Superintendent of the Cardiff Parks, and later went to Manchester in charge of the Parks there. Mr. Norman, therefore, had the great opportunity of working under one of the finest Parks Superintendents in the Country.

From Cardiff he went to the Royal Gardens, Kew, as a student gardener in 1910. Subsequently he became a temporary assistant in the Herbarium, working under Dr. Stapf. He held first-class certificates for the Board of Education Examination in Botany, Stages 1, 2 and 3, first class in Agricultural and Rural Economy, and first class in the Royal Horticultural Society Examination in Horticulture. In 1914 he became Superintendent of Parks and Open Spaces at Weston-super-Mare. During his term of office, he instituted many improvements in the lay-out of the Parks, the most noteworthy being the Floral Clock in the Alexandra Gardens which attracted the attention of many thousands of visitors.

Mr. Percy Norman was a member of the Institute of Park Administration, and was making himself a name when in 1932 he sustained serious injuries in a motor crash whilst in pursuance of his duties. He was ill for many months and partially recovered. He struggled on until 1940, when on his doctor's advice he retired and went with his wife to live at Exmouth. He passed away on May 26, 1944. Those of us who knew him, very much regret a career cut short. We have lost a friend as well as a capable and efficient Superintendent. Many Kewites who went to Weston-super-Mare had the pleasure of meeting him there, and his passing is a loss to a wide circle of friends.

W. L. LAVENDER.

#### PERCY HENRY PATMORE, M.B.E., M.M.\*

All who knew P. H. Patmore and who attended his courses of lectures on A.R.P. were deeply grieved to hear the news of his death as the result of enemy action.

"Pat," as he was known to his friends, was the first A.R.P. Officer appointed by the Ministry of Agriculture and Fisheries, his appointment dating from 1938. In addition to his day duties at the Ministry he was District Warden for the Whitehall district of Westminster, and his night duties were often very heavy. In air raids he was cool and quite fearless, and by a sad irony he was injured by a bomb which demolished his home at East Barnet, and he himself died in hospital a few days later (February 26, 1944).

Patmore's career should be an inspiration. He used to tell us how he threw up his job as an errand boy in order to "join up" in 1914. He served in France, and for bravery in tending and evacuating wounded under heavy shell fire he was awarded the M.M. When he was demobilised he had no future before him but he obtained a post as temporary clerk in the Ministry of Agriculture and Fisheries and at once set himself the task of self-education,

\* Though not a Kewite, P. H. Patmore was well known to the Kew staff through his lectures and demonstrations which extended over a period of 5 years.

winning his certificates and teacher's diploma for shorthand and also a permanent appointment in the Civil Service. We know also of his activities as a shorthand teacher under the L.C.C., as a member of Pitman's Council, and as Reader and Examiner to the Civil Service Commission. His hobby was his garden and he had a great love of plants and was delighted to have a peep behind the scenes when he came to Kew. He was awarded the M.B.E. for devotion to duty as the Ministry's A.R.P. Officer.

Communicated by G. FRENCH (Min. Agric. & Fish.).

### FREDERICK GEORGE SELBY.

All his friends at Kew heard with great regret the sad news that this promising young Kewite failed to return from an operational flight over Germany on the night of December 3-4, 1943.

Frederick George Selby was born on August 4, 1913. He began his gardening career at Bryony Hill, Godalming, and was afterwards employed in the gardens of Witley Park, Godalming, Surrey, Brockett Hall Gardens, Welwyn, Herts, and Antony House Gardens, Torpoint, Cornwall. In November, 1937, he entered Kew and was engaged in the Tropical and Decorative departments. His extension to the third year as a student was approved in November, 1939, and he was promoted foreman in the Decorative Pits early in 1940, and held this position for over two years until he joined up. His great interest in his chosen profession was shown by his satisfactory lecture records (he gained distinction in two subjects, Plant Physiology and Ecology), and in the fact that he was one of the few foremen who succeeded in obtaining the N.D.H. during his time at Kew. He passed the preliminary and final examinations in successive years, which was also unusual.

On October 16, 1942, he enlisted in the Royal Air Force and eventually became an Air Gunner with the rank of Sergeant. The aircraft in which he was serving failed to return from an operational flight over enemy territory—the night of the first great raid on Leipzig. The navigator of the plane, who is now a prisoner of war in Germany, wrote to his sister as follows:—"Fred did his duty well, and died still firing his guns. We owe our lives to the few moments' grace he gave us."

There is no doubt that had he been spared, Selby would have gone far in his profession. He was always on the Committee of the Social Club and took an active part in the Mutual Improvement Society, speaking frequently at the meetings. During his time at Kew he was a staunch supporter of the various sports clubs, particularly cricket at which he excelled, being a very good bowler and batsman.

After joining up he maintained close relations with Kew and visited the Gardens several times, in fact, he was at Kew on December 1, 1943, two days before his last flight.

Selby was a most pleasant companion. He never varied—he was always good tempered and cheerful and was extremely popular with everybody with whom he came in contact.

W. M. CAMPBELL.

## JOHN WILFRED SUTCH.

It was with very great regret that we heard of the death of Trooper J. W. Sutch, who was killed in action in Normandy on August 8, 1944.

John Sutch was born on November 8, 1923, at Plumstead, S.E., and he was educated at the Royal Masonic School, Bushey, Herts. He did well at his school and came to Kew in December, 1939, through an introduction from Col. L. C. R. Messel, of Nymans, and was classed as a Gardens Boy. He worked in the T. Range, Palm House and the Arboretum. He was knowledgeable, conscientious and showed considerable promise. His parents had a florist's business at Woolwich, from which he perhaps acquired a love of plants. He left Kew on July 1, 1942, in order to join H.M. Forces, and served in the 1st Northants Yeomanry as a Tank Driver. He went over to Normandy in the summer of 1944, his regiment having the honour of being the first to enter Caen, and at the time of his death he was in the battle for the Falaise Gap.

H. S. MARSHALL.

## PERCY ERNEST THYER.

We deeply regret to chronicle the death of yet another old Kewite while on active service. Percy Thyer was born on July 5, 1911, and before coming to Kew in May, 1936, where he served in the Tropical Department (Palm House, Insectivorous, Economics, Stove and Propagating Pits), he was employed by the Bishop of Bath and Wells in the gardens at the Palace, Wells, Somerset. In August, 1937, he left to go to South Africa as an exchange student. He took up his duties at Government House Gardens, Pretoria, on September 17 and remained there for approximately 12 months. In 1938 he was transferred to the P.W.D. Nurseries where he was allowed a certain amount of time every week to continue his studies at the Division of Botany. Returning to Government House Gardens, Thyer acted for a time as Head Gardener, and later, in 1938, he was sent to King's House, Durban, to gain experience in sub-tropical planting. He returned again to Pretoria and was due to sail for England in August, 1939. He desired, however, to remain in South Africa, and transferred to Government House Gardens, Cape Town.

In the early days of the war Thyer sought permission to join the Forces, but this was withheld on account of the shortage of staff. He joined a part-time unit and rose to the rank of corporal. In February, 1942, he was transferred to Bloemfontein to take charge of the Government Gardens, and remained there until he attested for military service. He joined the South African Defence Forces on June 5, 1943, and was killed in action at "Belvedere Farm," Citta d'Pieve, Italy, on June 17, 1944, while serving with the South African Armoured Division.

Thyer was hardworking and conscientious and had a good knowledge of his profession. Mr. H. R. G. Hose, Superintendent of

Government House Gardens, Pretoria, writes concerning him :—  
 “ During the time Mr. Thyer was employed in the Department of Public Works he has impressed everyone who came into contact with him socially and personally, as a man of excellent horticultural knowledge. . . . He was a very keen gardener who took an interest in his work, and his loss is sincerely regretted in the Department.”

The Rev. L. S. Lewis, Vicar of Glastonbury, who knew Percy Thyer since he was a choir boy, writes :—“ He crowded more into the 33 years of his life than many would in lives thrice as long ; he was full of schemes and was restless to see and do new things. That was part of his charm. You never got tired of his company. There was a perpetual zest. . . . His friends have received letters from Africa speaking of his straight, moral character and kind heart.”

H. S. MARSHALL.

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#### HAROLD CHARLES WAGG.

We learn with regret of the death of Mr. H. C. Wagg, which occurred in the European Hospital, Kampala, Uganda, on January 22, 1943.

Harold Charles Wagg was born on September 14, 1894, and began his gardening career under his father at Ossington Hall, Notts. He was afterwards employed at Newstead Abbey Gardens, Notts., Chester Gardens, Humshaugh, Wiseton Hall, near Bawtry, and Knowsley Hall Gardens, near Prescott, Lancs. With this varied experience he came to Kew in October, 1919, and worked in the Palm House and T. Range.

On leaving Kew in May, 1920, he went to Uganda to join the staff of the Kivuvu Rubber Co., and spent the remainder of his life in that country. In 1924 he became engaged in managerial duties with the Uganda Rubber and Coffee Estates, under Mr. H. A. Cannon, another old Kewite. He afterwards leased some estates in Toro, where for a number of years he successfully produced coffee. Later he had experience of mining and served for a time with the Protectorate Public Works Department, while before his last illness he was engaged on rubber production.

Mr. Wagg held the 1914-15 Star, General Service and Victory Medals, and during the last war, before he came to Kew, saw service in France with the King's Liverpool Regiment. From 1917-19 he served in Palestine with the Imperial Camel Corps. He belonged to the Uganda Squadron of the Legion of Frontiersmen and members of the Unit under the command of Capt. R. Blackie, attended his funeral, which took place at Kololo Cemetery. The ceremony was attended by a large and representative gathering, and the last post was sounded by trumpeters of the Uganda Police by courtesy of the Commanding Officer.

Mr. Wagg was a man of sterling character and a planter of great experience. He was a life member of the Guild.

H. S. MARSHALL.

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## EDWIN CHARLES YOUNG.

News has been received of the death of Mr. Edwin C. Young in March, 1944, the funeral having taken place at Budock, near Falmouth. Known at Kew as Charlie Young, he entered the Gardens as a Student Gardener in October, 1893, from the gardens of Wyck Hill House, Stow-on-the-Wold, and remained two years. For a year or more he had charge of the Stove, but the latter part of his time was spent in the Arboretum Nursery, and it was during that time that I got to know him. He was a competent gardener. On leaving Kew he went as head gardener to the gardens at Postlip, Winchcombe, Cheltenham. Later he occupied similar positions at Boswaric and Swanvale, both near Falmouth.

Charlie Young had considerable skill with his pencil, particularly as a caricaturist, a talent that was sometimes brought to bear upon young Kew gardeners. On one occasion two Scotsmen set out, as so many had done before, to improve the status of the Student Gardener, and their idea was better dress. One Sunday afternoon they paraded the gardens to demonstrate their views. They wore top hats, frock coats, striped trousers and spats, with brightly-polished boots. Next morning the matter was discussed at breakfast between Young, the late Mr. S. A. Skan and myself. We decided that some action should be taken and Young's pencil was invoked. In a few minutes he had produced a sketch. On one side of the paper were two Glengary caps with long tails, with a pair of Kew clogs beneath each. An arrow pointed to the other side of the paper where there were two immaculately dressed young men in frock coats, top hats and spats, and beneath was printed the word "Evolution." We had some difficulty in getting the drawing into the notice box, but I took Fred Tribble into my confidence and he worked it. The two young men were furious. The queer thing was that neither Skan nor I were suspected and neither of the two men knew who the artist was until I told them 30 years later.

I was grieved to hear of the loss of my artist friend. I had lost touch with him recently as he lived in Cornwall and seldom came to London. His wife predeceased him, and he leaves a daughter to whom the sympathy of everyone will be extended. She has been blind from birth and is now being cared for in a home. Some years ago I heard that she had some talent as a pianist.

W. DALLIMORE.



MUSEUMS.	Entered Kew	
Keeper.....	†John Hutchinson, LL.D., F.L.S.....	1904
Botanist .....	F. N. Howes, D.Sc.....	1926
" .....	R. Melville, B.Sc., Ph.D. ....	1934
Preparer .....	L. J. Harding .....	1913
Typist .....	Miss B. Saunders.....	1943

#### JODRELL LABORATORY.

Assistant Keeper .....	C. R. Metcalfe, M.A., Ph.D.....	1930
Botanist (Temporary) .....	C. Leighton Hare, M.Sc., Ph.D.....	1941
Laboratory Assistant.....	F. R. Richardson.....	1934

#### THE GARDENS.

Curator .....	†W. M. Campbell, N.D.H. ....	1922
Deputy Curator (Arboretum).....	*†Arthur Osborn, A.H.R.H.S.....	1899
Assistant Curators :—		
Temperate Department .....	*†C. P. Raffill, M.B.E., V.M.H., A.H.R.H.S. ....	1898
Tropical Department.....	†Lewis Stenning .....	1925
Decorative Department .....	†S. A. Pearce.....	1937
Herbaceous Department .....	††G. H. Preston .....	1934
" " .....	R. Holder (Acting).....	1940
(Clerk Higher Grade).....	†Ernest G. Dunk .....	1914
Clerical Officer .....	Miss J. P. Ireland.....	1942
" " .....	†Miss D. P. F. King.....	1935
" " .....	W. E. Gray .....	1942
" " .....	C. F. Norman .....	1927
Shorthand Typist .....	Mrs. D. M. Dimes.....	1943
Sergeant-Constable .....	G. E. Williams.....	1906
Packer and Storekeeper .....	†H. W. Ruck.....	1907

#### FOREMEN.

<i>Department</i>	<i>Name</i>	<i>Entered Kew</i>	<i>Previous Situation</i>
Rock Garden.....	§L. R. Brown ...	20 Sept., 1937	Hyde Park, London.
Ferrieres .....	§B. L. Perkins ...	4 May, 1936	Manchester Parks Department.
Palm House .....	§R. A. Hudson...	16 Nov., 1936	Parks Department, Leeds.*
Herbaceous Department	§P. L. Benton ...	27 Sept., 1937	Hillside, Llandaff, Cardiff.
Flower Garden .....	§S. Rawlings ...	20 July, 1936	Parks Department, Salford.
Decorative Department*	§A. H. Pettigrew	18 Mar., 1935	Parks Department, Swansea.
Propagating Pits .....	§D. W. Sayers ...	18 May, 1937	Abbotsford Gardens, Burgess Hill, Sussex.
Temperate House Pits...	§E. Bird .....	22 Aug., 1938	Westmore Gardens, Leighton Buzzard.
Arboretum .....	C. F. Coates ...	25 Sept., 1915	Manor Park, Potton, Beds.
Orchids .....	*W. E. Everett...	12 Sept., 1938	Messrs. Sanders, St. Albans.



## STUDENT GARDENERS.

<i>Name</i>	<i>Entered Kew</i>	<i>Previous Situation</i>
Blowers, John W. ....	31 May, 1943	Royal Air Force.
§Blowfield, Arthur H. ....	28 Dec., 1938	Devonshire House, Roehampton.
§Bourner, Eric H. ....	24 April, 1939	The Dell, Wheathampstead, Herts.
Brown, R.M.S. ....	25 Jan., 1943	Parks Department, Norwich.
§Clark, James ....	28 Dec., 1938	Cambridge Botanic Garden.
Clark, Philip ....	2 April, 1942	Glasnevin Botanic Garden, Eire.
*§Cook, Gilbert G. ....	5 Sept., 1938	Parks Department, Southampton.
§Davies, Philip W. C. ....	24 April, 1939	Parks Department, Fleetwood.
§Downs, Dennis A. ....	27 Mar., 1939	Luton Hoo Gardens, Luton.
Drewitt, Clifford E. ....	21 Feb., 1944	Chatsworth House, Derby.
§Eaton, Horace J. ....	4 April, 1938	The Nurseries, Borrowash, Derby.
§Ford, Frank J. ....	25 Oct., 1937	Parks Department, Margate.
Hack, Hugh R. B. ....	25 Jan., 1943	Benmore Forestry School, Dunoon, Argyll.
§Hebden, Francis J. ....	15 Nov., 1937	Cambridge Botanic Garden.
§Hollis, David C. ....	9 May, 1938	Llandaff, Cardiff.
§James, Kenneth H. ....	15 Mar., 1939	Messrs. Aish & Son, Dunstable, Beds.
§Joy, George S. ....	27 June, 1938	Hillside, Llandaff, Cardiff.
Kruger, Harry J. ....	22 Mar., 1943	Parks Department, Cardiff.
§Mackenzie, Dugald C. ....	27 Feb., 1939	Wellington B.G., New Zealand.
§Mason, Maurice ....	16 May, 1938	Rotherfield, Chesham Bois, Bucks.
§McElroy, Leonard F. ....	30 May, 1939	Knap Hill Nursery, Woking.
§Middleton, James ....	20 Mar., 1939	Parks Department, Dudley.
§Norris, John L. ....	23 Aug., 1937	Royal Hospital Gardens, Chelsea.
§Puddle, Charles E. ....	24 July, 1939	Parks Department, Manchester.
§Redman, James ....	13 Mar., 1939	John Innes Hort. Inst., Merton.
Sivyer, Geoffrey R. ....	30 Aug., 1943	S.W.A.E.C.
§Slade, Walter J. ....	26 June, 1939	The Gardens, Trent Park, Herts.
Souster, John E. S. ....	27 Sept., 1943	St. John's School, Tiffield.
*§Stevens, Frederick B. ....	21 Nov., 1938	Parks Department, Manchester.
§Stott, John W. E. ....	30 May, 1938	Tresco Abbey, Isles of Scilly.
§Will, Alistair G. K. ....	4 Sept., 1939	Parks Department, Blackpool.
§Willett, Edward J. S. ....	6 Feb., 1939	Messrs. Secrett, Walton-on-Thames
§Wilmot, Cyril J. ....	15 Mar., 1939	Parks Department, Folkestone.

## TEMPORARY FOREMEN.

<i>Department</i>	<i>Name</i>	<i>Previous Situation</i>
Palm House .....	H. Collin .....	Forestry Commission, Gravetye.
Tropical Pits .....	H. Zobel .....	Southwood Gardens, Hildenborough, Tonbridge.
Temperate House .....	E. Avery .....	Les Glaciels, Golfe Juan, A.M., France
Temperate House Pits	W. H. Parmentier ...	Moriaux Gardens, Alderney, C.I.
Herbaceous Dept. ....	*J. Nelson .....	Parks Department, Manchester.
Flower Garden .....	vacant	—
Ferrieres .....	E. M. Fletcher .....	The Gardens, Alexandra Palace.

	<i>Entered Kew</i>	<i>Previous Situation</i>
Temporary Forewoman (Decorative Dept.) :		
Victoria E. Paine .....	30 Sept., 1940	Battle, Sussex.
Woman Demonstrator :		
Phyllis Cornwell .....	14 July, 1941	Newnham College, Cambridge.
Assistant Woman Demonstrator :		
Irene Sanders .....	23 Aug., 1943	The Priory, Orpington, Kent.

## WOMEN GARDENERS

<i>Name</i>	<i>Entered Kew</i>	<i>Previous Situation</i>
Ambrose, Ruth M. ....	21 Sept., 1942	Studley College.
Adams, Dorothy E. ....	11 Dec., 1944	Blackmore Estate, Liss, Hants.
Allen, Beatrice .....	19 May, 1943	Swinton Castle, Ripon.
Armitage, Mary M. ....	22 June, 1942	Waddesdon Gardens.
Bird, Helen.....	3 July, 1944	Hoarcross Gardens, Burton-on-Trent.
Bundy, Mrs. Caroline ( <i>née</i> Scott) .....	9 Feb., 1942	Eltham Hall, Kent.
Clark, Violet M. ....	23 Sept. 1940	Landscape Gardener, The Vale, Broad- stairs.
Cowell, Margaret C. ....	13 Sept., 1943	Swanley College.
Dunster, Gladys V. ....	6 Oct., 1944	Atkins' Laboratories, Kew.
*Eady, Molly C. ....	10 May, 1943	Compton Place, Eastbourne.
Eperon, Kathleen .....	11 Dec., 1944	Hampshire County Council.
Evans, Margaret J. B. ....	6 Sept., 1944	Studley College.
Farmer, Mrs. Jean M. ( <i>née</i> Thompson) .....	17 Feb., 1941	Quarry Wood, Burghclere, Newbury, Berks.
Hamond, Mary .....	21 Nov., 1944	Nursery Gardens, Stanmore, Middlesex.
Hoffa, Else E.....	4 Sept., 1944	Sibton Park, Yoxford.
Helmsing, Nada J.....	3 Oct., 1944	W.L.A.
Holyoake, Elaine D. ....	29 June, 1942	Kneesworth Hall, Royston.
Ireland, Mrs. B. ....		
Kelly, Eileen F.....	26 Aug., 1940	Botanic Gardens, Glasnevin, Dublin.
Miller, Edith .....	3 July, 1944	W.A.A.F.
Pedgrift, Jessie F. ....	23 Sept., 1940	Ewell Castle Gardens, Surrey.
Rymer, Nancy B. ....	6 Sept., 1944	Studley College.
Sampson, Joan .....	16 Oct., 1944	Bank of England.
Sharps, Jean E. ....	8 Mar., 1941	W.L.A., Lancaster.
Stent, Helen J. ....	29 Sept., 1941	A.T.S.
Tracy, Margaret E. ....	6 Nov., 1944	Market Gardens, Haddenham.
Trower, Suzette M. ....	11 Dec., 1944	John Innes Foundation.
Willmer, Marjorie .....	17 July, 1944	Cuckoo Hill Nurseries, Pinner.

## TEMPORARY GARDENERS.

<i>Name</i>	<i>Entered Kew</i>	<i>Previous Situation</i>
Body, H.....	19 July, 1943	Stuart Low Co., Enfield.
*Brien, S. ....	18 May, 1942	New Lodge, Hanbury, Staffs.
Coutinho, S. ....	5 April, 1941	Hamburg Botanic Garden.
Friis, O. ....	4 May, 1942	Denmark.
Fitzgerald, J. ....	2 Dec., 1944	Imp. War Graves Comm.
Mullins, W. ....	28 Sept., 1942	The Gardens, Pains Hill.
Pawsey, S. J. ....	28 May, 1940	Norbury Gardens, Ashbourne, Derby- shire.
Potier, P. J. ....	17 Oct., 1944	Jersey C.I.
Scott, J. A. N. ....	11 April, 1944	Wrexham Parks Department.
Slater, J. N. ....	17 Jan., 1945	Dundee.
Sutch, N. W. ....	15 May, 1944	R.A.F.

## IMPROVER GARDENERS AND BOYS.

Addey, S.	Funke, C.
Andrews, R.	Howells, D. A. W.
Bingham, D.	Mason, D. L.
Brown, D.	Parker, R.
Cox, T.	Perathoner, K. A. A.
Cropley, R.	Smith, C.
Curtis, E. W.	Stroud, F.
Dowse, W. F.	Thomas, J.
Durrant, A. M.	Wooldridge, D.

## LIST OF REVISED ADDRESSES.

The following list consists of new life members, new addresses, or addresses which required modification. For the addresses of Members not in this list the Journal for 1943 should be consulted.

## \* Life members.

	Left Kew	Present Position and Address
Atkins, L. G., N.D.H.....	Oct. 1931 ...	Farm School, Newton Rigg, Penrith, Cumberland.
Bates, W. ....	June, 1932	34, Chaseside Ave., Enfield, Middlesex.
Bolton, Miss I.E.....	Oct. 1944 ...	30, Kelso Place, London, W.S.
*Brown, Geoffrey B. ....	July 1944 ...	Parks Dept., Blackpool, Lancs.
Bundy, E. F. ....	July 1944 ...	Asst. Park S., Langholme Lodge, Petersham Rd., Richmond, Surrey.
*Christie, J. S., A.H.R.H.S....	Nov. 1909 ...	55, Market Rd., Carlisle, Lanarkshire.
Cooper, Mrs. B. ....	Aug. 1944 ...	The Priory, Priory Rd., Kew, Surrey.
Cornwall, Miss P., N.D.H. ....	Dec. 1944 ...	County Agric. Inst., St. Mary's Gate, Derby. ...
Cramer, Johannes D. W. ....	Aug. 1940 ...	Address unknown.
*Creasey, L. B. ....	Sept. 1929 ...	F., Parks Dept., Cape Town, S. Africa.
*Davies, H. F. ....	Feb. 1938 ...	Nat. Bot. Gardens, Kirstenbosch, Cape Town.
Davis, H. T. ....	Mar. 1931 ...	99, Talbot Hill, Brislington, Bristol, 4.
Dawson, D. ....	June 1944 ...	Parks Dept., Roath Park, Cardiff.
*Douglas, J. ....	Mar. 1934 ...	Parks Dept., Town Hall, Clacton-on-Sea.
Driver, Miss M. J. ....	Oct. 1944 ...	Oakley Cottage, Crowell, Kingston Blount, Oxford. ...
*Elson, Alec S. ....	Feb. 1936 ...	"Glenholme," Sycamore Rd., Farnborough, Hants. ...
England, J. W. ....	Jan. 1928 ...	S., Parks Dept., Merthyr Tydfil, Wales.
Eul, Frank H. ....	Feb. 1935 ...	East Lodge, Danson Park, Bexley Heath, Kent.
Ewart, J. W. ....	Aug. 1937 ...	c/o Agric. Dept., Accra, Gold Coast.
Freeman, G. W. G. ....	June 1936 ...	Knap Hill Nursery, Knap Hill, Woking, Surrey.
Gale, Ernest W. B., N.D.H. ....	Dec. 1932 ...	The Lodge, Salt Hill Playing Fields, Slough, Bucks and S., Parks Dept., Slough.
Godseff, L. G. ....	Mar. 1901 ...	"Woodside", 49, South Drive, Upton, Wirral, Cheshire.
Grant, Miss N. ....	Sept. 1917 ...	c/o W. F. & G. A., Courtauld House, Byng Place, W.C.1.
Heath, F. A.....	Mar. 1901 ...	115, Grange Rd., S. Norwood, S.E.25.
Hendon, L. C. ....	July 1928 ...	"Fieldhurst," Highland Rd., Seer Green, Bucks.
*Heppell, Joseph ....	May 1937 ...	Education Dept., County Offices, Brecon.
Jollie, F. J. E. ....	April 1937 ...	Massey Agric. College (N. Z. University), Palmerston, North New Zealand.
*Jones, C. ....	Aug. 1923 ...	Rotherby Nurseries, Rotherby, Melton Mowbray, Leics.
Kaul, K. N. ....	Oct. 1944 ...	Dept. Botany, Lucknow University.
Kennelly, A. G. ....	Jan. 1935 ...	Dept. Agric. (Hort. Div.), Christchurch, New Zealand.
Laking, Leslie ....	Aug. 1941 ...	Dept. of Botany, Univ. of Toronto, Toronto, Ontario, Canada.
*Lock, Jas. H. ....	Oct. 1927 ...	8, Brown Street, Northenden, Manchester.
*Lothian, T. R. N. ....	Mar. 1940 ...	Lincoln Agric. College, Lincoln, Canterbury, New Zealand.

## III. ASIA.

CEYLON. J. J. Nock ; T. H. Parsons ; W. I. Pieris.

## INDIAN EMPIRE.

**Assam.** J. Elder ; J. A. Elliot.

**Bengal.** G. H. Fothergill ; L. G. Richards ; H. Thomas ; A. S. Wilson.

**Hyderabad.** Sergt. S. H. Miles.

**Madras.** G. Farley.

**Punjab.** E. A. Hughes.

**United Provinces.** \*K. N. Kaul ; A. P. Lancaster.

JAPAN. Y. Okami ; K. Yashiroda.

MAURITIUS. G. Corbett.

PALESTINE. D. Zaidenberg.

## IV. AUSTRALASIA.

## AUSTRALIA.

**New South Wales.** J. Boorman ; F. E. Hazelwood ; W. H. Paine ; R. H. Rumsey.

**Queensland.** W. Leslie.

**South Australia.** W. J. Down ; A. Green.

**Victoria.** H. V. Child ; J. Lawson ; \*P. Trevaskis.

NEW ZEALAND. A. W. C. Anderson ; M. J. Barnett ; \*F. J. E. Jollie ;

C. H. Jones ; \*A. G. Kennelly ; L. Lannie ; D. H. Leigh ; C. A. Little ;

\*T. R. N. Lothian ; J. G. C. Mackenzie ; \*B. P. Mansfield ; J. A.

McPherson ; G. Mills ; R. E. Purrott ; C. Snow ; W. Swan ; D. Tannock.

TASMANIA. I. V. Thornicroft.

## V. EUROPE.

AUSTRIA. B. Jelinek.

BELGIUM. A. Bogemans ; P. Chollet ; J. Collard ; F. L. G. Derwael ; C. L. De

Troyer ; L. Gentil ; H. Van Audenaerde ; L. de Wolf ; O. F. V. Wuyts.

## BRITISH ISLES.

## England.

BEDFORDSHIRE. J. E. Airy ; W. Dixon ; R. J. English.

BERKSHIRE. J. E. Cave ; P. Chandler ; E. Feltham ; W. C. Fishlock ;

Miss O. R. Garnett ; J. E. Goldsmid ; A. Jefferiss ; H. G. Langham ;

J. MacCartan ; A. E. Wiseman.

BUCKINGHAMSHIRE. \*E. W. B. Gale ; J. L. Glasheen ; Capt. F. B.

Grinham ; \*L. C. Hendon ; W. Pearce ; H. C. Sampson ; H. H. Thomas.

CAMBRIDGESHIRE. F. Glover ; W. F. Godfrey ; W. N. Lawfield ;

F. G. Preston ; \*Miss F. A. Sharps ; F. Shaw ; G. W. Stonebridge ;

E. J. Thomas ; J. Waugh ; W. L. Wood.

CHESHIRE. A. E. Boreman ; R. A. Burton ; T. Cartwright ; Miss I. M.

Davidson ; J. Dixon ; S. Edmondson ; E. G. Godseff ; \*L. G.

Godseff ; W. Grant ; W. Hackett ; Miss O. Horder ; H. F. Mayne ;

\*H. Ritchings ; W. E. Stewart.

CORNWALL. W. G. Andrews ; B. Gill ; J. Green ; J. J. Gribble ;

A. Symons ; H. Williams ; E. C. Young.

CUMBERLAND. \*L. G. Atkins ; M. Stanley.

DERBYSHIRE. \*Miss P. Cornwall ; J. O. E. Gibson ; W. H. Tuck ;

T. S. Wells.

DEVONSHIRE. R. Badgery ; A. E. Blake ; Mrs. Brown ; T. Clements ;

F. G. Cousins ; Miss H. W. Davidson ; E. W. Davy ; Miss E. M.

Gunnell ; C. Hazel ; J. P. Jenkins ; R. S. Lynch ; J. E. May ;

H. W. Sayer ; T. J. Veal ; W. C. Ward ; H. H. Willis.

DORSETSHIRE. Miss C. O. Bell ; G. H. Eady ; M. Summers.

DURHAM. L. Buss ; A. Race ; L. P. Richardson ; M. Vardy ; F. H.

Wright.

ESSEX. G. A. Baker ; T. G. Curry ; Mrs. V. M. Danes ; J. Douglas ;

W. A. Hockley ; A. R. Marshall ; R. H. Mason ; H. S. Patton ;

\*Miss N. Shallcross ; J. R. Spray ; C. S. Walsh.

- GLOUCESTERSHIRE.** E. C. Bowell; \*H. T. Davis; G. F. Gardiner; H. W. Kemp; W. Page; C. G. W. Poulter; J. W. Smith; W. H. Walters; Miss J. W. Watson; Miss N. Wiltshire.
- HAMPSHIRE.** E. M. Biggs; R. Binnington; Miss G. Cope; \*A. S. Elson; J. Fisher; J. G. Grant; Lt.-Col. W. B. Little; R. H. Locke; E. C. Lyne; K. McCready; C. H. Oldham; J. D. Snowden; H. Taylor; Mrs. A. Troupe; J. H. Turner.
- HEREFORDSHIRE.** Mrs. H. P. Wood.
- HERTFORDSHIRE.** Mrs. K. Chambers; W. Collins; E. Cooper; E. C. W. Cooper; W. J. Jennings; W. McAllister; L. B. J. Miller; O. B. Orchard; P. W. Page; L. G. Riley; F. K. Sander; F. G. Syer; H. J. Ward.
- HUNTINGDONSHIRE.** F. Tunnington.
- KENT.** N. Baggesen; V. G. Barham; C. Burfoot; W. Corbett; G. S. Crouch; W. Dallimore; H. J. Davies; W. F. Downes; \*F. H. Eul; W. Howell; Miss A. Hutchings; W. C. Ibbett; G. Lamb; M. Nicholls; S. F. Ovenden; Miss E. Plummer; H. P. Robinson; A. E. Smartt; C. R. Stock; \*R. W. Younger.
- LANCASHIRE.** B. W. Allison; W. H. Barker; A. Blackburn; F. Boulton; T. D. Boyd; \*G. B. Brown; C. A. Cann; E. Chantler; S. H. Chantry; A. J. W. Cheek; T. E. Clarke; C. J. Collins; L. Cook; T. Coventry; A. B. Culham; G. Dean; A. Edwards; L. G. Godseff; W. Grindley; J. J. Guttridge; H. Hall; A. E. Harper; E. Hewitson; H. C. Hildyard; O. Horton; G. A. Hyland; \*J. H. Lock; F. G. Maunder; D. G. McIver; G. H. Oliver; L. N. Prosser; J. Richardson; C. Robinson; W. C. Scott; J. Sparrow; \*Miss M. Speake; R. O. Stanion; H. F. Werner; J. E. Wilding; G. Wolstenholme;
- LEICESTERSHIRE.** T. G. Bullock; P. C. E. Jackson; E. B. James. \*C. Jones; Mrs. W. E. Stott; Miss B. Tarver; J. W. Watson.
- LINCOLNSHIRE.** D. E. Horton; C. E. W. Shambrook; G. H. C. Vanson; J. C. Wallace; E. C. Wray.
- LONDON (Postal Area).** A. H. G. Alston; E. Baker; R. Balch; F. A. Barham; \*Miss I. E. Bolton; E. A. Braybon; A. J. Brooks; P. J. Butler; J. D. Coales; H. R. Cocker; Miss K. D. Cornford; Mrs. A. P. Craig; Dr. J. M. Dalziel; Mrs. J. O. D. Davis; E. J. Donnelly; J. E. Farmer; C. E. C. Fischer; W. G. Fry; F. G. A. Goldsack; \*Miss N. Grant; \*F. A. Heath; J. R. Hibbert; J. H. Holland; Mrs. C. M. Jackson; A. L. G. Jensen; Mrs. E. M. Jensen; Miss L. Joshua; Mrs. A. E. C. Joy; Miss E. B. King; Miss M. H. Lancaster; W. J. C. Lawrence; G. J. Leith; F. M. MacCartney; Miss M. Macintyre; F. C. Mack; H. F. Macmillan; T. W. Main; J. T. Marks; \*R. E. Mason; H. Maw; \*Mrs. G. McCulloch; J. McNab; Lieut. A. B. Melles; B. J. J. Moran; J. Offley; J. M. Purves; F. W. Rolfe; \*C. W. Rudd; D. Saville; J. Smith; Rev. W. C. Smith; H. Spooner; A. C. G. Spriggs; L. Strachan; J. W. Sutch; Miss M. W. Tanner; \*J. Troll; G. Wassell; \*Miss B. C. Watts; H. Welsh; A. C. Whipps; R. A. White; R. V. Williams; H. Willison; E. V. Willoughby;
- MIDDLESEX.** \*W. Bates; A. S. Bentall; H. J. Brain; K. G. Burbridge; Miss R. L. Burford; H. A. Cossum; C. H. Curtis; J. M. Darrell; G. Dear; Miss M. G. Flew; A. Hearn; A. J. Hopkins; C. Howlett; C. A. Joy; Miss B. H. Judge; E. Lake; F. H. MacKinnon; P. W. Mansell; P. J. T. Montgomery; C. A. Newman; T. Powell; W. D. H. Prior; G. W. Pyman; H. T. Shewan; \*A. Swatton; W. E. Trevithick; D. V. Wells; Mrs. W. V. Whibley; W. C. Worsdell.
- MONMOUTHSHIRE.** T. W. Briscoe; G. Chambers; Mrs. R. M. Morgan; E. W. Studley.
- NORFOLK.** P. F. McCormack; \*W. Porter; G. F. Wheeler.
- NORTHAMPTONSHIRE.** G. G. Elphick; J. J. Mackintosh; H. Tyrrell.
- NORTHUMBERLAND.** G. Shotton.
- NOTTINGHAMSHIRE.** Mrs. M. E. Suckling.

- OXFORDSHIRE. Mrs. N. L. Alcock; \*Miss M. J. Driver; F. G. Gammon; Miss D. A. Hutchinson; A. Mould; G. W. Robinson; A. Timmers; \*A. P. Walby; R. H. Wildy.
- SHROPSHIRE. S. W. McLeod Braggins; W. N. A. Ward.
- SOMERSET. Miss S. W. Bishop; H. Cowley; J. D. Halliburton; J. C. Jarrett; A. Turner.
- STAFFORDSHIRE. A. E. Aubrey; J. Lee; A. W. Proudlock; W. S. Sharp; T. A. Summerfield; T. Wiltshire.
- SUFFOLK. F. Clarke; E. G. Creek; F. P. Knight; W. Pinnion.
- SURREY. J. M. Abbot; Miss M. G. Aikman; F. S. Banfield; A. C. Bartlett; Mrs. S. E. Beale; W. J. Bean; E. J. Beatty; E. Brown; Miss E. A. Bruce; \*E. F. Bundy; I. H. Burkill; H. G. Butcher; T. H. Candler; \*Mrs. B. Cooper; W. H. Cork; Mrs. A. D. Cotton; J. Coutts; E. Coward; O. R. Culver; R. Derry; J. H. Dines; D. A. Downs; Harry Eavis; Miss A. Fitch; P. Fysh; \*G. W. G. Freeman; R. Gill; W. Gray; B. W. Harborne; R. L. Harrow; Miss V. M. H. Harvey; A. Holden; E. H. Killick; Miss K. M. Knight; W. L. Lavender; T. Lomas; C. H. Middleton; A. T. Mullins; J. Parsons; M. C. Prior; R. L. Proudlock; W. Rastall; H. Sanders; T. Sargeant; W. G. Sheat; F. S. Sillitoe; G. C. Stedman; R. Sudell; G. E. Taylor; A. G. Teal; B. B. Wass; W. N. Winn; Miss M. L. Yeo.
- SUSSEX. P. L. Bachelor; J. A. E. Blackman; C. E. Cherry; T. R. Clark; C. H. Harris; E. G. Hooper; H. H. Jarman; G. C. Johnson; J. Lambourne; Mrs. S. T. Lees; W. A. Longhurst; C. E. E. Luff; \*Capt. H. A. Pettigrew; W. W. Pettigrew; N. J. Prockter; Mrs. F. Brooks Purchas; Miss W. C. Watson.
- WARWICKSHIRE. C. Bate; P. W. Conn; W. Franklin; R. B. Hands; E. Hopper; A. W. J. Ivey; J. D. Jones; J. Lewis; F. M. Mark; H. A. T. Perkins; R. J. Platten; E. H. Robson; H. C. Rudge; W. G. Rutter; W. Thorpe; H. B. A. Tindall.
- WESTMORLAND. R. R. Hayes.
- WILTSHIRE. W. F. Gullick; T. Hunter; E. Long; A. W. Tidy.
- WORCESTERSHIRE. G. H. Cave; W. G. Dodd; J. T. Johnson; W. Lambertson.
- YORKSHIRE. A. J. Booker; A. J. Brown; J. Brown; A. B. Culham; W. N. Evans; G. O. Flynn; D. Halkerston; Mrs. D. Halkerston; W. R. Hibbins; \*R. K. Mowforth; C. H. A. Robson; A. H. J. White; E. Yuill.
- Isle of Man.** E. J. H. Coward.
- Scotland.** J. Adamson; G. H. Banks; W. D. Besant; K. W. Braid; \*J. S. Christie; W. Coutts; J. D. Gordon; J. E. Leslie; W. MacLaggan; T. D. Maitland; W. W. McKenzie; R. C. McMillan; M. McNeill; T. Oliver; E. Stirling; P. J. C. Woodhouse; G. T. F. Wyndham.
- Wales.** Miss Champion; T. P. Davies; \*D. Dawson; \*J. W. England; C. R. Gregory; R. Grundy; J. E. Harris; J. Heppell; J. A. Mann; Miss F. Mundy; W. Nemes; W. B. Pritchard; S. J. Roberts; J. T. Smith.
- Northern Ireland.** A. E. Oliver; J. H. Stewart; C. B. Ussher.
- Eire.** J. W. Besant; P. J. Gray; Mrs. A. Jameson; J. Murphy; Mrs. P. C. Trench; T. J. Walsh.
- CHANNEL ISLANDS. B. E. Farr; H. F. Green; Miss M. Maxted; D. H. Ransom; Miss H. Rowan; Mrs. A. G. Somers; W. A. Warry.
- CYPRUS. F. B. Butler.
- CZECHOSLOVAKIA. R. Halik.
- DENMARK. E. V. Floto; L. Jensen; T. Juul; H. J. Klaaborg; A. Lange; A. Ulleriks.
- FRANCE. J. Bintner; Mrs. J. Bintner; M. M. Chevalier; J. Commeau; G. H. Cressier; H. Jirásek; G. H. Larsen; G. Martin-Lecointe; P. Martin-Lecointe; M. Merigeo; H. Navel; A. L. J. Poy; W. Roberts; F. W. Smith.

- GERMANY. A. Beer; G. P. W. Dumke; G. Dusing; K. Prolluis; K. H. Rottgardt; A. Weber; H. A. Werder; K. W. R. Winter.
- HOLLAND. C. van Ginkel; B.M.E.S. Hoogstad; T. H. Koning; B. J. de Ruyter; H. B. van der Veer.
- ITALY. V. Bonfiglioli; E. Lagorio; O. Lorenzi; E. Mario; L. Ronco; S. Viale; T. Viale.
- LUXEMBURG. E. Luja.
- MALTA. G. J. D. Cousin; S. Zammitt.
- POLAND. Miss M. Landau.
- ROUMANIA. R. D. Hogg.
- SWEDEN. G. A. BILLSTRÖM; L. M. Hammarberg; O. M. Hammarberg; E. G. Johansson; G. W. Page; S. B. Rolff; N. Waldenberg.
- SWITZERLAND. M. J. Berney; L. J. Massott; K. Meili; P. Mottier; R. Simond; K. Zwicky.
- TURKEY. G. A. Catt.
- U.S.S.R. Wm. Korn.

## RULES.

- 1.—The Society be called the “*Kew Guild.*”
- 2.—The Guild shall consist of all who are or who have at any time been employed as Student-Gardeners or any position of responsibility in the Royal Botanic Gardens, Kew.
- 3.—The object of the Guild shall be to promote mutual and friendly intercourse between past and present Kewites, and to further their interests.
- 4.—The business of the Guild shall be conducted by a committee constituted as follows :—Seven present Kewites, one sub-foreman, one Student Gardener, and twelve Old Kewites. Four non-official members (three of whom shall be Old Kewites) shall retire annually in rotation, and shall not be eligible for re-election for at least twelve months. The election shall take place at the Annual General Meeting. Candidates may be proposed by any member of the Guild provided that the names of Candidates be sent in writing to the Secretary at least seven clear days before the Annual Meeting. A Chairman of Committee shall be elected by the Committee for a period of three years.
- 5.—There shall be a Secretary and a Treasurer, who shall be elected annually at the Annual General Meeting.
- 6.—The annual subscription shall be 5/-, payable on January 1st, to entitle members to all publications of the Guild. A member whose subscription is three years in arrears shall be notified and shall cease to receive the publications of the Guild until his arrears be fully paid.
- 7.—Any Member whose subscriptions are fully paid, may, on the payment of one subscription of £3 3s., become a Life Member and be entitled to all the privileges of the Guild without further payment. A sum representing not less than one-half of each life subscription shall be invested in the name of the Trustees and the liabilities to Life Subscribers shall be clearly shown in the annual Statement of Accounts.
- 8.—The Guild shall publish annually a Journal containing a list of the Kew Staff, from the Director to the Student Gardeners, a list of Old Kewites, with the date of their leaving Kew and their present position and addresses, and such other information as shall appear desirable.
- 9.—An Annual General Meeting shall be held in London about the end of May, when the Committee’s Report and Statement of Accounts shall be submitted, and any business of a general nature transacted. The Annual General Meeting shall be followed by a Dinner.
- 10.—There shall be a voluntary Benevolent Fund for the purpose of helping Kewites who may be in urgent need of pecuniary assistance.
- 11.—Unpaid volunteer Students shall be eligible for Associate Membership of the Guild, provided always that they have paid a minimum life subscription of £3 3s. (payable in advance) entitling them to such privileges as detailed in Rule 7, and have completed not less than 12 months’ service at Kew.
- 12.—The Rules shall not be altered except by a two-thirds majority at the Annual General Meeting. Any proposals for the alteration of Rules shall be sent to the Secretary in writing at least twenty-one clear days before the date of the Annual General Meeting, and shall be sent by him to members resident in the United Kingdom at least seven clear days before the date of the Annual General Meeting.





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### PLANTING OUT

Before planting, soak all roots for a few minutes in a mixture of  $\frac{1}{4}$  teacupful Clensel to 1 gal. water. Next, water-in at this strength and continue twice weekly for a fortnight. This will stimulate root action and ward off ground pests during the early period of growth.

### AS A PLANT FOOD

Mix 1 teacupful Clensel in 2 gals. water, going round the roots and over the foliage. Do this once or twice weekly.

### GENERAL SPRAYING

At the first sign of Pest attack—Get Clensel on the job at once—same spraying strength as above, using a stirrup pump (fine-jet) or syringe.

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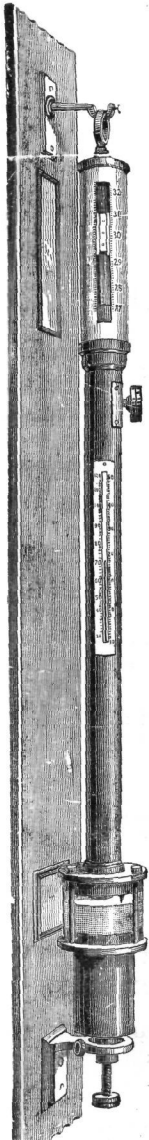


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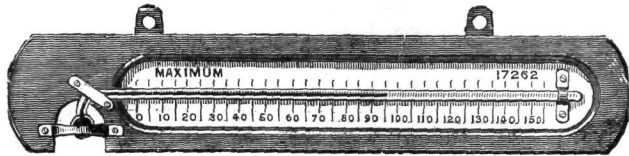
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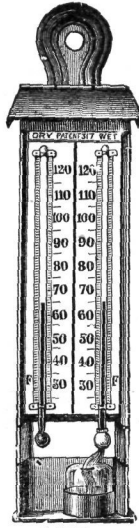
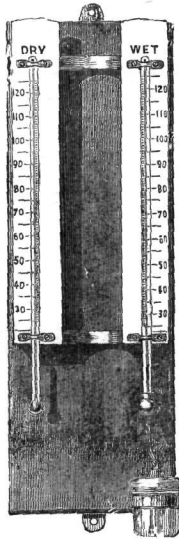


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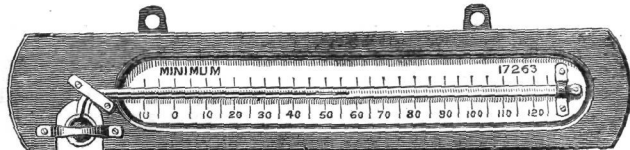
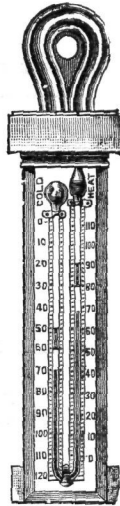
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