

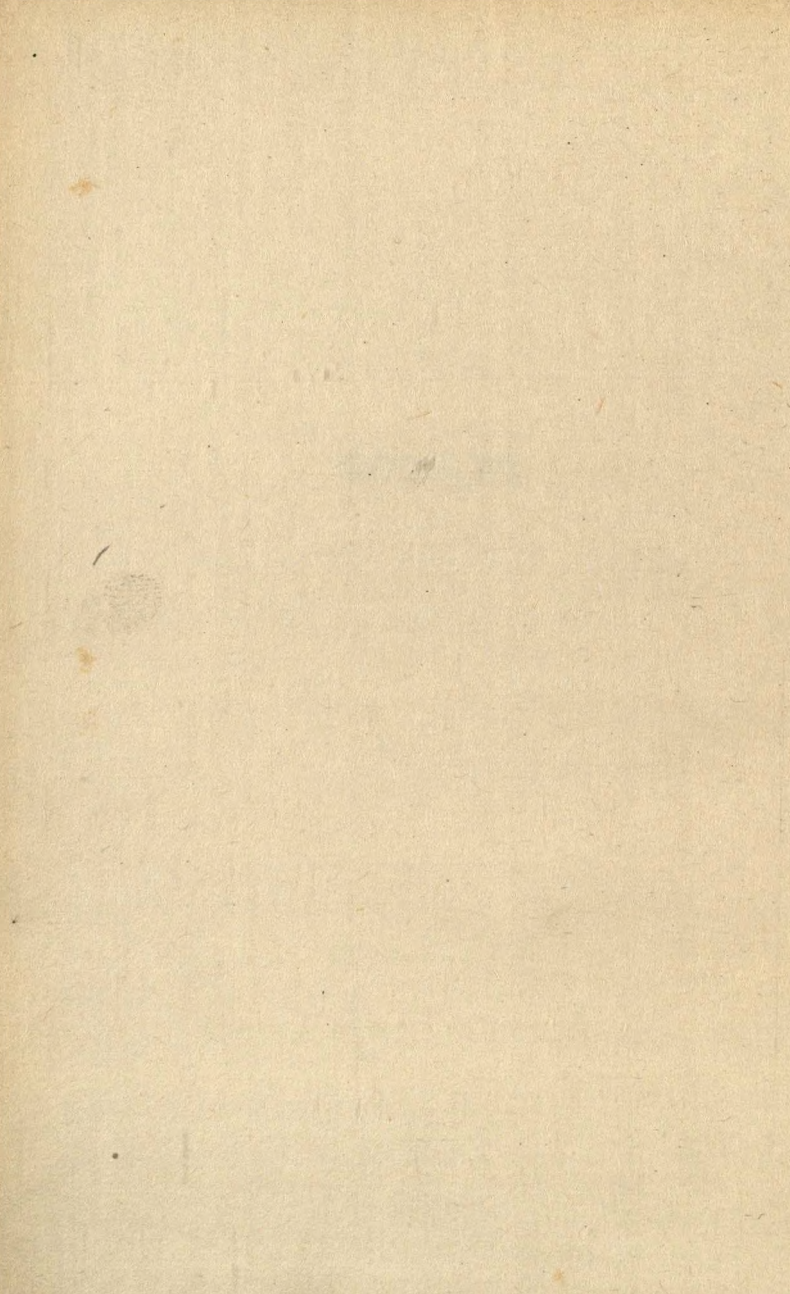
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Royal Society of Arts.



**ISLANDS**







AN AVENUE OF ROYAL PALMS IN BARBADOS



# ISLANDS

## WEST INDIAN—ÆGEAN

BY  
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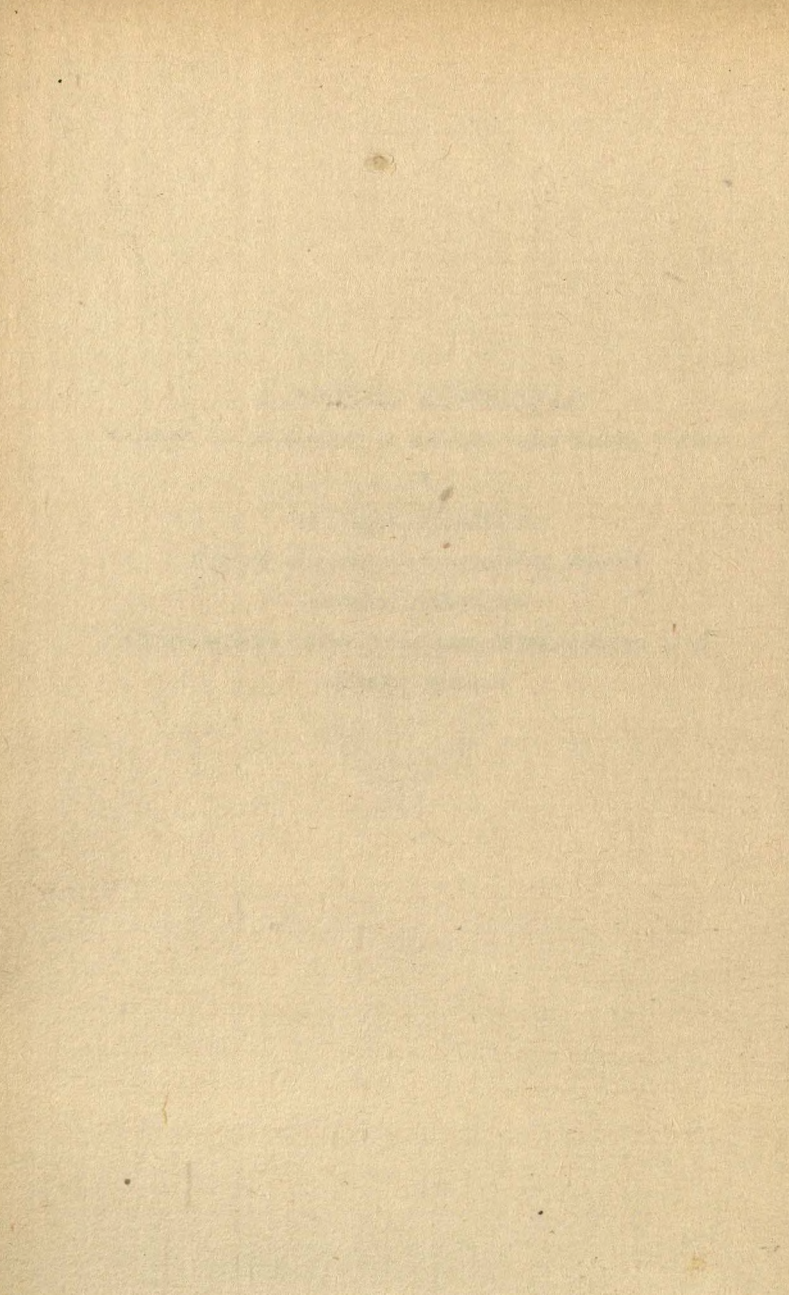
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## PREFACE

I HAVE to begin with an apology to British Guiana for including that great colony in a book whose title is "Islands." As everybody knows and emphatically the people of British Guiana know, the only British possession in South America is anything but an Island.

My chief object in visiting the West Indies last Christmas was to take part in the laying of the foundation stone of the Imperial College of Tropical Agriculture, Trinidad. I happen to be Chairman of the Governing Body of that Institution. Hence I am afraid this College is rather prominent throughout the first half of the book, but it deserves to be prominent as it is the first attempt to found an institution devoted to teaching and research in tropical agriculture, and I feel certain it has a great future before it.

Whilst in Trinidad I received a cabled invitation from my old friend Mr. J. Pierpont Morgan to join the party on his steam yacht, the

“ Corsair,” and to visit many of the islands in the Ægean Sea. I did so and I do not think I ever spent a pleasanter five weeks.

I am indebted to the Editor and Proprietors of *The Times* for permission to republish Chapters I–II, IV–VII, and X–XII, which appeared in its columns, to the Editor and Proprietor of the *Review of Reviews* for permission to republish Chapter VIII, and to the Editor and Proprietor of *Outward Bound* for permission to republish Chapter IX. To all these gentlemen I offer my thanks.

For the pictures illustrating the West Indian Islands I am indebted to Mr. Algernon Aspinall, Secretary to the West Indian Committee. Some of these are from photographs taken by himself. The last three chapters are illustrated by photographs taken by Admiral Aubrey Smith, to whose kindness I am indebted for their use.

A. E. S.

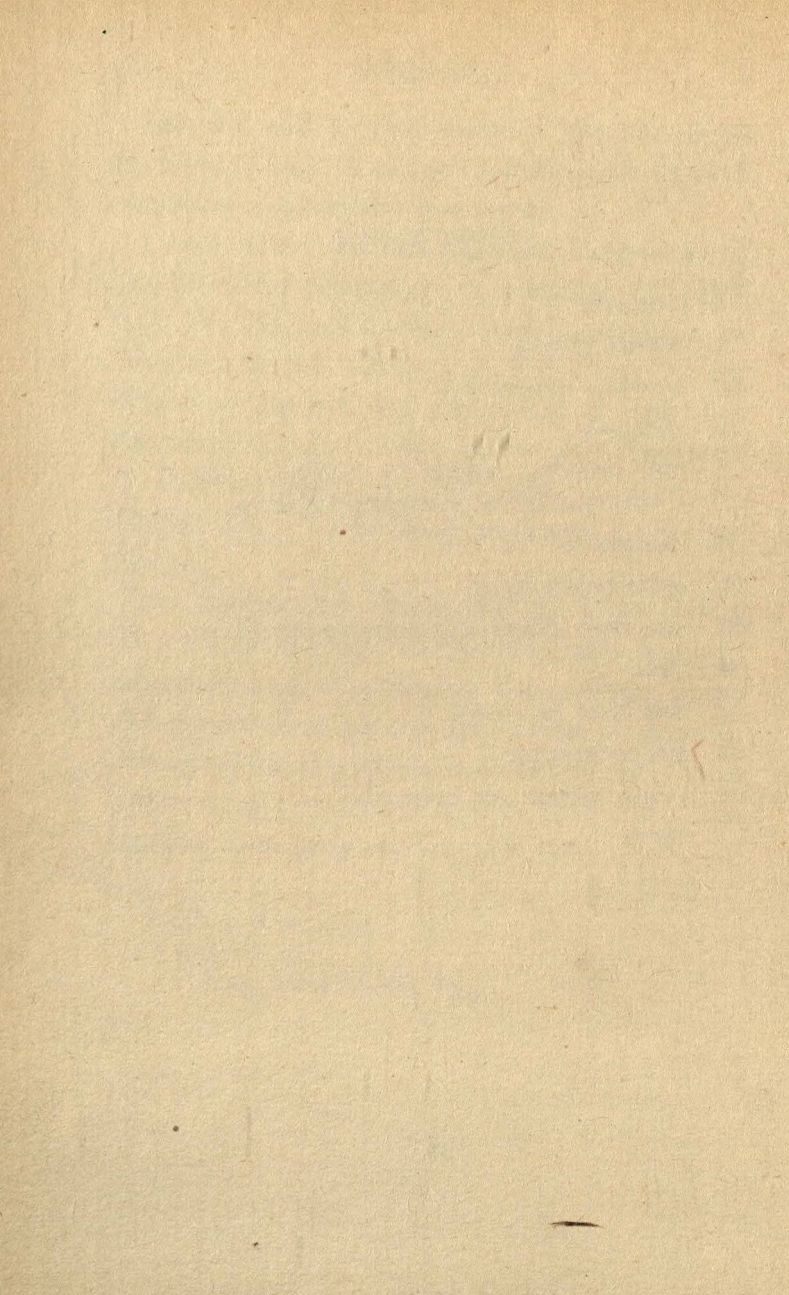
*Christ's College Lodge,*

*Cambridge,*

*St. Martin's Day, 1924.*

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# ISLANDS

## CHAPTER I

### BARBADOS

“ th’ excess of heat is but a fable ;  
We know the torrid Zone is now found habitable.”—COWLEY.

ON the direct mail steamship services there are but few routes left where you can travel consecutively for thirteen days without touching or, indeed, almost without seeing land. Such a route is that between Avonmouth and Barbados.

It is true that we sailed amongst a number of far-off islands, which the ship’s officers said were the Azores—whence the St. Michael oranges used to come—but they lay remote, and we saw no sign of life on or near them, not even a fishing-boat. It was, indeed, a lonely furrow that our screws ploughed in the ocean, but it had its beauties—

“ Flying-fish about our bows,  
Flying sea-fires in our wake.”

I think we saw but three ships on our voyage of nearly 4000 miles. As Tennyson tells us :

“ We follow that which flies before,  
We know the merry world is round,  
And we may sail for evermore.”

It was therefore very pleasant, on the morning of the thirteenth day, to find ourselves anchored off Bridgetown, on the lee side of Barbados. Owing to the absence of land-locked harbours the earlier settlers in many of the West Indian Islands placed their chief towns to the leeward, and they are thus unfortunately cut off from the trade winds of the Atlantic.

The prevailing colours of the land are green, the colour of hope, and white. Barbados was the first British island in which the sugar-cane was planted, and we owe the green to the waving leaves of the sugar-cane, whose sap in Barbados is now largely turned into fancy syrup, which is mainly marketed in Lower Canada. The white in the colour scheme of the island is due to its coral formation, which builds up all the land with the exception of the so-called Scotland District, on the north-east side. Further, the island is almost ringed about by coral reefs, which, in

places, render navigation difficult. The highways are not so dazzlingly white as are the roads in the Bermudas, but there is in the hot, tropical sunlight quite enough glare in their Christmas-cakey roads to justify a stranger in the use of tinted eye-glasses.

Barbados is one of the most densely populated areas on the face of the earth. Whereas in British Guiana there are but 3·3 inhabitants to the square mile, in Barbados there are over 940. The fertility of the shallow soil, which enables the island to support so many souls, is due to some extent to successive deposits of volcanic ashes thrown up by the Soufrière in St. Vincent. A similarly dense agricultural population is supported by the ash-strewn slopes of Etna.

Barbados boasts, with the exception of the Bermudas, the most ancient Legislative Body in the King's Dominions beyond the seas. It enjoys representative institutions, as British Guiana does, but, happily, it is not hampered, as the latter is, by a cumbersome Constitution inherited from the Dutch. It is intensely British, and, with reason, is proud of its people, many of whom take to a seafaring life, and are conspicuous for their efficiency, and, as the recent tour of the

West Indian cricketers proved, for their skill in sports.

The absence of the *Anopheles* mosquito, and consequently of malaria, may account for the manly and dominant character of the Barbadian. You meet him in all the Seven Seas, and usually in positions of trust. The *Stegomyia* mosquito is found on the island, and as it conveys yellow fever, this devastating disease has at times broken out. Yellow fever kills a man; malaria weakens and debilitates a people.

We have probably always had this pestilence with us since the creation of the world—that act of “unpardonable impudence,” as Anatole France calls it; but the first description of the disease only dates back to 1647, when an outbreak occurred in Barbados.

Then, as now, it devastated the shipping of the port, and was soon introduced by ships into St. Christopher and, later, into Guadeloupe. The following year it was in Cuba, and in 1655 in Jamaica, and it gradually spread throughout the whole of the West Indies until a century or more later it reached the Island of St. Thomas.

One of the peculiarities of the disease is that it frequently disappears from a given locality for

long periods of time. For instance, it was absent in Barbados after the first outbreak until 1690, and when it recurred it was at first not recognised as being the same disease which devastated the islands forty-three years before. In the eighteenth century there was another break of fifty-four years, and similar breaks can be recorded in most of the West Indian islands. But thanks to improved sanitation and the enlightened efforts of the Rockefeller Foundation there have been no cases of yellow fever in the West Indies for many years, and both they and the Spanish Main have been freed from a deadly pest which more than any other produced a deep-seated terror amongst all who came in contact with it.

There are no Indian or Chinese communities in Barbados, and the negro population is of a high type. In the time of the Stuart troubles many Royalists took shelter there, but there is another side to the picture. Numerous Irish and Scotch were deported thither and other "unruly men," who were sold for a period of seven years to the planters as white "servants." The descendants of these unhappy folk still survive, mostly by fishing, in rather miserable

conditions on the north-east side of the island ; they are known as " red-legs."

Of all the British West Indian Islands, Barbados is the most healthy. Its climate is comparatively cool, and it is less damp than its forest-clad neighbours. There are no swamps or standing water—all sinks away into the porous coral rock—and there is a corresponding absence of mosquitoes. Indeed, the island is a health resort, and to it come the sick and sorry from less healthy regions to be cured by the ever-blowing, fresh trade winds of the Atlantic.

Barbados was the first land we struck, and here we first met the typical food of the Tropics. A hospitable club gave us flying-fish and turtle cutlets for lunch, fortified by pungent, hot sauce and other " fixings," and at Barbados we saw our first sugar-cane plantation. The Spaniards first introduced from the East sugar into the West Indies, and although to-day the island of Cuba produces some sixteen times as much as the other islands and British Guiana put together, Barbados was the first of the West Indian Islands to receive the sugar-cane. To-day there are some 74,000 acres of this plant under cultivation.



In 1920 the produce of this crop was valued at over £3,000,000.

In its nature the sugar-cane is essentially a grass; it looks like a coarse grass seen under a lens. To those passing through a sugar plantation the crop seems monotonous, masses of long, sword-like leaves, diversified only by the tasselled flowers, but seen from a distance, especially from the sea, it presents a pleasing look of luxuriant verdure. Like other grasses, the sugar-cane is hardy. At one time it almost supplanted in the West Indies all other crops, for it is suited to varying conditions, and will grow "in light or heavy soils, under copious and scanty rainfall, in humid and exposed and wind-swept situations."

Introduced into the Antilles about the middle of the sixteenth century sugar was the basis of the enormous fortunes we can still read about in *Lady Nugent's Journal*, Marryat's novels, and the *Biography of William Hickey*. Relics of these opulent times are still seen in the old historic mansions, the homes of the hard-drinking and light-thinking planters, which are still to be seen, but are fast decaying, in various parts of the island. The beginning of the disappearance of

the vast fortunes dates from 1807, when the slave trade was mercifully abolished and the decay of the prosperity of the estate owner was hastened by the liberation of the slaves in 1834.

Although for a time a duty was put on slave-grown sugar from Cuba and elsewhere, this was removed in 1846, and the planters, whose compensation for the loss of their slaves was considered by them to be wholly inadequate, now endured further disasters. During the nineteenth century a new rival to cane-sugar arose in the form of beet-sugar. This industry, encouraged by the First Napoleon, gradually attained vast proportions in Central Europe, and at the end of the century, by means of a system of bounties and cartels or trusts in Austria and Germany, drove the price of sugar in Great Britain far below the cost of production.

Added to the economic disasters set out above came the sudden collapse of the Bourbon cane. This variety had been introduced in the eighteenth century into the islands from Tahiti, where it is believed to have originated, and for about 250 years it formed the staple variety of all the island crops. In 1890, however, "rotten-cane" was reported from several places, and losses

varying from 25 to 50 per cent. occurred in the islands and in British Guiana. The rot is caused by a fungus, whose name is too long to print here, and the diseased portions of the plant are riddled by a certain beetle—the shot-borer—which was at one time thought to be the cause of the trouble.

Although in the remoter parts of Trinidad and in some districts of British Guiana the Bourbon strain still struggles on, it has been almost entirely replaced, first, by existing disease-resisting varieties, and, later, by seedling varieties, for the most part produced by the hopelessly underpaid, but very able, Agricultural Departments in Demerara and Barbados.

Why a strain like the Bourbon should have held its own for well-nigh 250 years and then suddenly collapsed is a matter of much speculation, and probably the problem will never be solved. The most likely hypothesis is that it fell a victim to a fungus introduced from the East. A newly-imported fungus attacking a virgin soil is always most virulent.

The days of vast fortunes made from sugar-cane with slave labour are passed; but by hard work, intensive cultivation, the employment of scientific

experts, the sugar-planter can still make a competence, and this is especially true in the larger and better-managed estates.

It is even truer to-day than it was in the days when Gilbert wrote his poignant poem :

“ You do not often get a chance  
To see a sugar-broker dance,  
From his abode  
In Fulham-road  
Through Brompton to the City.”

At any rate, in these days sugar planters have little cause to dance.

## CHAPTER II

### BRITISH GUIANA

*Damus petimusque vicissim*

AT the public luncheon given to the delegation from the Imperial College of Tropical Agriculture at Georgetown, British Guiana, just before they sailed for Port of Spain, the chief speaker said: "What we want is population, publicity, and capital."

And it is indeed so. This is the burden of the song of the planter in British Guiana, our only colony in South America, which covers an area equal to Great Britain, and extends from the Atlantic Ocean to the source of the Essequibo, near the Equator. The total population of this spacious land does not amount to 300,000 souls, and of this number 125,000, or 42 per cent. are East Indians. The population is, indeed, stationary, and the Census of 1921 shows an increase of but 1650 over the Census of 1911. The smallness of this increase is to some extent

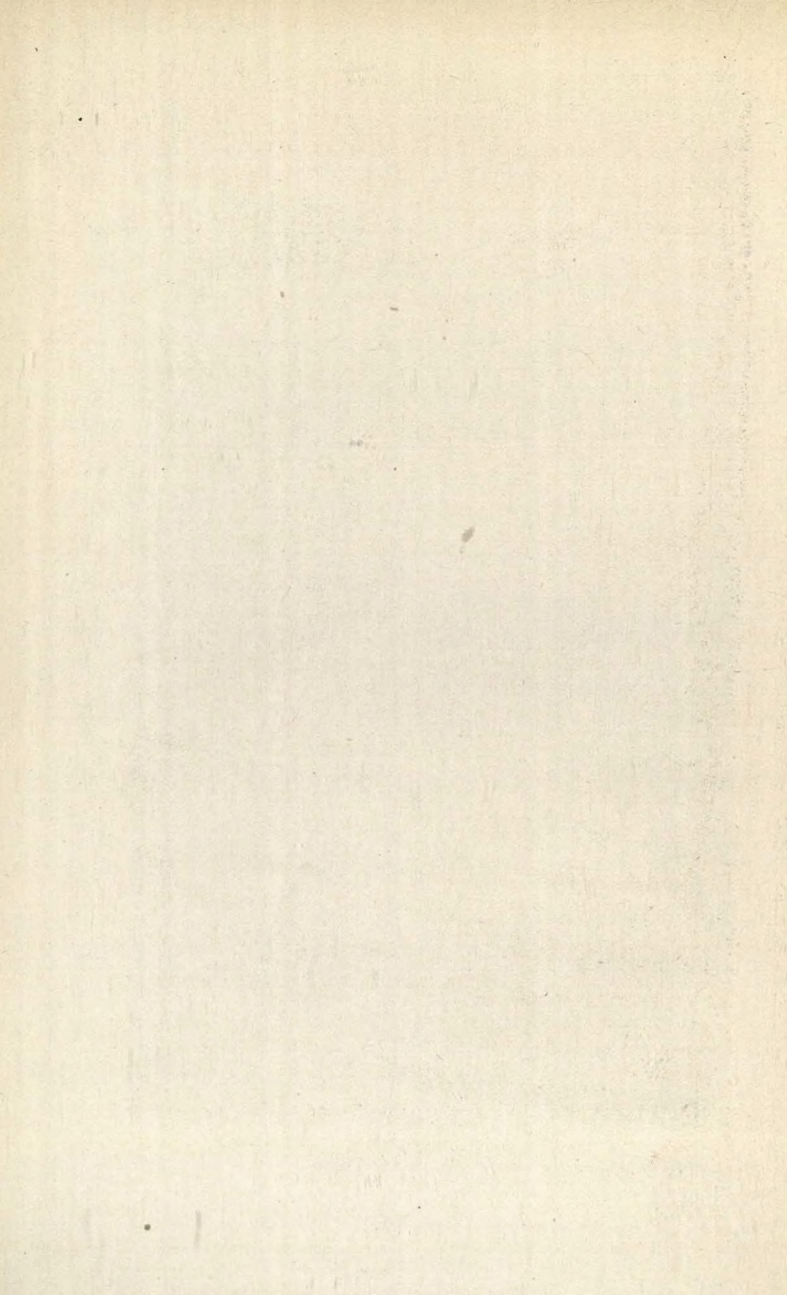
due to the devastating outbreaks of influenza in 1918 and 1919, which were responsible for some 12,000 deaths, but the cessation of the immigration of the East Indians is the chief cause.

For the last forty years the colony has been wholly dependent on immigration from India for the increase of its agricultural population. The Indian is well treated. On the best estates hospitals are provided for the sick, and light railways convey him from his home to the field where he works; on the road to Berbice one passes several mosques. But in spite of the over-population in his native country and the certainty of finding work in British Guiana, and in spite of the fact that he is soon qualified for a vote in the local Parliament—for he enjoys equal rights and privileges with all other British subjects, with unrestricted individual rights as far as religion is concerned—the agitators in India succeeded in bringing about a cessation of immigration more than seven years ago, and since that time there has been a decline in the Indian population.

The East Indian is clamouring to get into Kenya, where he is not wanted, and he declines



A STREET IN GEORGETOWN, DEMERARA





to enter British Guiana, where he is welcome, and where he frequently raises himself to a position of independence and often of affluence. The opinion of some of those qualified to judge is that the only chance of attracting him back to British Guiana is entirely to forbid his landing there.

More than most of our Colonies, British Guiana is cosmopolitan. Besides Indians, there has been a considerable influx of Portuguese, chiefly from Madeira, the Azores and Cape Verde Islands, and the language of Portugal is frequently heard. There is also a considerable colony of Chinese, many of whom take high position in the commercial and professional worlds. With the increase in the gold and diamond output, Jews have begun to appear.

The new-comer to Demerara is struck by the fact that the low-lying seaboard edge of the colony is, at high tide, below the sea-level. The sea is, indeed, kept from the land by defences which are frequently broken through, and going from Georgetown along the excellent baked-brick road to Berbice one frequently travels between lakes recalling the lagoons of Venice. These low-lying coast-lands form the populated area of British Guiana. From them, through a

stretch of often worthless savannah, are approached, further south, the high hills whence the gold and diamonds come.

The hinterland stretches away to the frontier of Brazil and Venezuela. From the high volcanic mountains of the last-named Republic, which are seen from Trinidad, right along the north-east border of South America as far south as the Amazon, this low-lying sea-coast extends, and is broken by the deltas of the enormous east-flowing rivers, which carry their mud far into the Atlantic Ocean. In fact, the word "Guiana" is said to be derived from a native word meaning "waters."

The value of the diamond yield in British Guiana now reaches £1,000,000 a year, the richest fields being in the Mazaruni district, which is singularly and exceptionally free from mosquitoes and flies. The stones are of a very high standard. The gold mined between 1886 and 1921 was valued at over £9,500,000, and there are valuable bauxite deposits in easily accessible sites. Communication is still a difficulty in British Guiana, and there is now an aeroplane service being established between the capital and the gold and diamond-mining dis-

tricts, and, as in Canada, a good deal of exploring and surveying is being done by the airmen.

The native inhabitants are now restricted to a few scattered groups, and do not exceed 10,000 souls. These so-called Buck Indians are copper-coloured aborigines of small stature, well formed, and of a peaceful and amiable disposition; but, unfortunately, they are rapidly dying out before the advance of what we call civilisation, with its associated diseases.

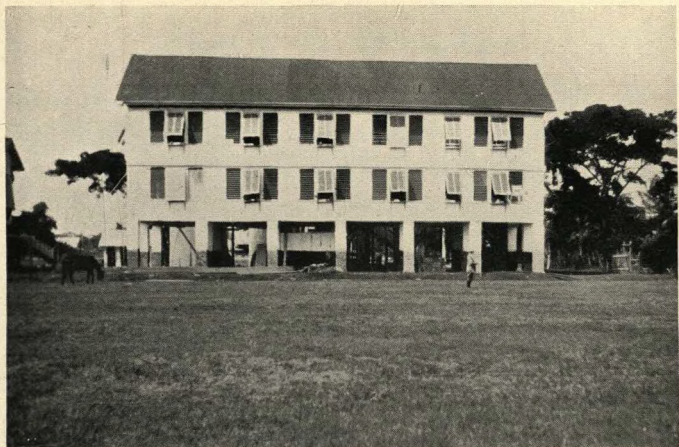
Just at present, like the rest of the world, British Guiana is suffering from a wave of depression. The finest and best-managed estates are still holding their own, but it is sad to pass the sites of others which are little more than memories.

One of the chief objects of the present Government is to continue to drain the water off the low-lying land along the coast. Whether all the inhabitants will welcome this is a different question. At present they can angle for their fishy food from the windows and doors of their houses and a few casts of the net will provide enough shrimps and prawns to furnish them with a breakfast. Quite a lot of people in this world, as the Irish have often shown, object to being "ameliorated," and this, so far as the present

writer's observations show, is equally true of some of the people in British Guiana. The great bulk of them wish to be left alone. Still, if the labour question is to be solved, and it can only be done by immigration, conditions must be improved, for the death-rate is far too high.

A good deal of work has been devoted to the animals, plants and minerals of British Guiana, but still more is left to be done. Lately Mr. Beebe and other Americans have written much on the fauna and flora of the land. Much has also been recorded in official documents by the Government experts, but such records are for the most part hidden away in Blue Books. The Colony should be re-surveyed. Such surveys as exist are incomplete and inaccurate. They tend to mislead the pioneer and those who would develop the inexhaustible resources of the Colony. Given the necessary funds, the Government would press forward such a survey.

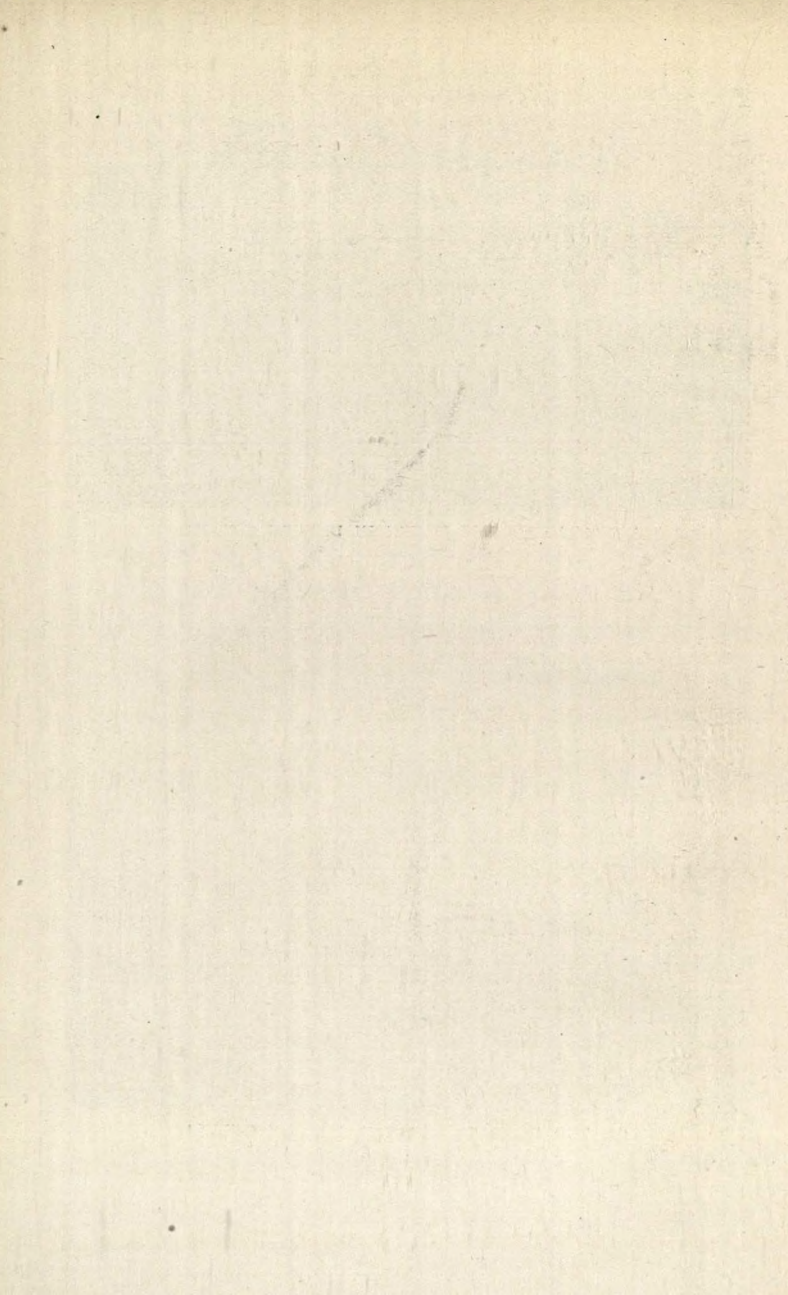
To the very transitory visitor the facts that the giant *Victoria Regia* lily is a common weed and that the Canje pheasant, better known to the zoologist as the Hoatzin, could be shot, but must not be, almost in the streets of New Amsterdam are very astonishing. The Canje is remarkable



A CHARACTERISTIC HOUSE IN BRITISH GUIANA



ON THE ROAD TO BERBICE, BRITISH GUIANA



for its peculiar smell and for the fact that its young have claws on the first and second digits of the wing. With their aid the young bird crawls quickly about on all fours, like a lizard.

In the towns, natural noises abound. Day and night dogs bark. The crowing of cocks and the triumphal note of achievement, "something accomplished, something done," of the hen are continuously heard. As the sun sets the piping hum of the mosquito arouses one's worst apprehensions. The whistling frog, an importation from Barbados,

" nightly to the listening earth  
Repeats the story of his birth."

The purring rumble of the great toad, or Crapaud, supplies the bass. He is, to quote Mark Tapley, "very spotted, very like a particular style of old gentleman about the throat, very bright-eyed, very cool, and very slippy." To the lullaby of these creatures the traveller gets within the mosquito netting and prays for sleep.

## CHAPTER III

# TROPICAL AGRICULTURE

AN ADDRESS ON TROPICAL AGRICULTURE DELIVERED  
AT GEORGETOWN, BRITISH GUIANA ON 8TH  
JANUARY 1924.

A LARGE proportion of the King's Dominions beyond the seas lies between the Tropics of Cancer and Capricorn. Almost half Australia, about one-third of India and of Burma, vast tracts of Africa, British Guiana, and innumerable islands in the East and West Indies and in the Pacific Ocean are tropical, and still larger portions of the Empire are sub-tropical. The cultivation of these great and fertile lands has hitherto been empirical rather than scientific. The young planter or farmer picked up what knowledge he acquired from an older planter or farmer, just as not so very long ago the young "sawbones," such as Bob Sawyer and Benjamin Allen, learnt much of his surgery and medicine from the local apothecary and not at a medical school.



With the view of changing this the British authorities have initiated an entirely new movement, and by the establishment of the Imperial College of Tropical Agriculture at Trinidad they are providing for the agriculturist of the warmer regions of the globe, not only in the West Indies but in all tropical areas of the Empire, and indeed outside the Empire, with a sound, modern and scientific training.

In dealing for a short space with Science and Agriculture it is only possible to dwell on one or two of its many aspects. The subject is so vast that one might discourse on it for years and yet only scratch the surface. Hence I will cheer you all up by saying that I propose to neglect altogether most of the important aspects of science in the culture of crops and the management of estates. I have nothing to say about Chemistry, Physics, the Classification of Plants, Horticulture, the Soil, or on Economics, though this last word reminds me that in Great Britain the farmer is singularly neglectful of his accounts, pays little attention to "costings," and also I fear in some cases to the tax-gatherer, for often he does not know what his income is. I shall speak only on the subject of disease and what causes disease,

and how in many cases disease can be controlled though in few cases cured. For the Plant Doctor is much more successful as a Quarantine Officer than a Physician.

In the words of Lucretius<sup>1</sup>:

“Now I will explain what the law of disease is, and from what causes the force of disease may suddenly gather itself up and bring death-dealing destruction on the race of men and the troop of brute beasts,” and I may add on the world of plants.

The greater number of the diseases which afflict plants are caused by—

(1) Insects which eat them up, puncture and wound their tissues and in many cases introduce fungi (bacteria, moulds and mildew) into the body of the plant. Some of these insects, as has recently been discovered, infest the crops with minute unicellular organisms not unlike the animal parasites which cause Sleeping-sickness in man and the Nagana disease in cattle, both so deadly in Africa.

(2) Fungi; these are by no means only conveyed by insects. Their spores or seeds are blown about by the wind and enter any wounded

<sup>1</sup> *De rerum natura*, vi. 10. 70.

or bruised part of the plant. They exist in incredible numbers in the soil and push and burrow into the roots. Once inside the plant they multiply exceedingly, destroy the cells which build up the plant, choke the vessels which convey the sap to the leaves, block the air passages so that the plant cannot breathe.

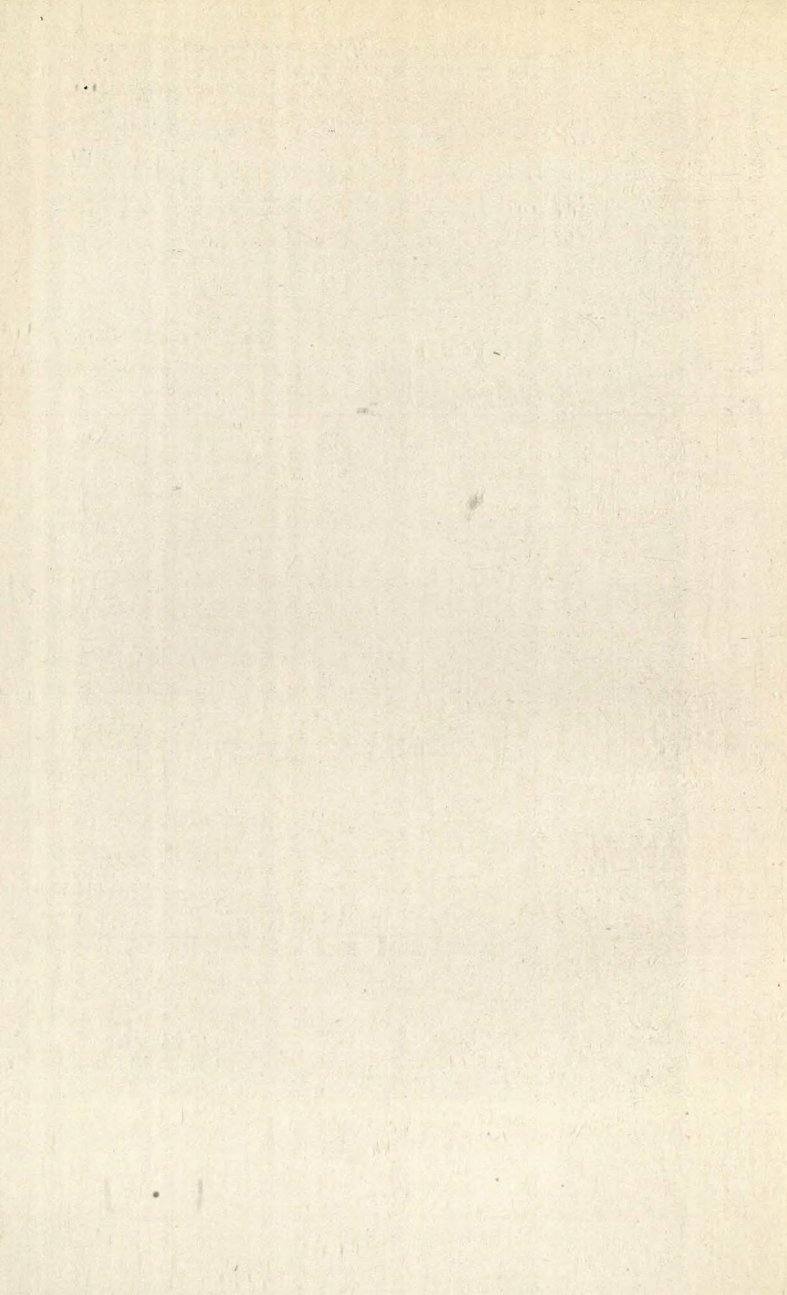
(3) Round-worms (Nematoda). These are minute worms often only  $\frac{1}{25}$  inch in length and invisible to the naked eye. They burrow from the soil into the plant and form galls or tumours. They attack the coffee plant in the French islands of Guadeloupe and Martinique, and in Java, though the Liberian coffee is said to be resistant to them; they have checked the cultivation of the Chinese banana in Egypt; they are a serious pest in the wheat-field and amongst the tomatoes and lilies grown under glass; they also attack coco-nut palms and bananas. One species (*Heterodera radicola*) attacks and injures the roots of no less than five hundred different plants! We don't know nearly enough about these round-worms and we must look to our men of science to throw more light on their varied activities.

These, then, are the different agents which in the main cause plant diseases. A sick plant is

usually the result of the attack of either an insect, a fungus, or a round-worm. Now how are we to check the enemies of plants and lay them low? One way is to render the plant strong and healthy so that its power of resistance is increased and it succumbs less readily to attack. This means very careful and very clean farming and ceaseless care. Another method is to enforce a strict quarantine, and this is increasingly being done all over the world. It is more difficult to get a plant than it is to get a case of whisky into the United States, or a dog into Great Britain. Such a quarantine is most easily enforced in an island such as Fiji. There the sugar plantations are almost controlled by one great company who have cleared their crops of fungi and bring effective force to bear on the smaller planters to use only fungus-free cuttings. Another way is to select and breed from races which are disease-resisting; such selection may be successful or may fail, at any rate it is rather speculative unless you follow the lines laid down by Mendel. Then it is sure. By following these lines Biffen at Cambridge has produced a rust-resisting wheat which breeds pure and has eliminated a loss of some 28 per cent. But this takes infinite



A CHARACTERISTIC CANAL IN GEORGETOWN, DEMERARA



patience. Each female flower must be fertilised with a known pollen and by hand, and the final and fixed strain takes four years to produce. But all rust is not the same rust, and the resistant wheats of North Europe might succumb to the South American form of the fungus. Some rusts live part of their life on wheat and another part of their life on other plants. Remove the latter and the pest cannot survive.

Some cases may here be mentioned where the researches of men of science have saved the agriculturist and the community millions of pounds. Let us for a moment consider the Black Rust of wheat (*Puccinia graminis*), which lives part of the time on the barberry. In 1903, after Rostrup had shown that the annual loss to Danish agriculture from Black Rust amounted to Kr.10,000,000, the Law of 1869 for the extermination of the barberry (the alternate host of the fungus) was put into effect, and since that time the disease has been completely controlled. In South-west Wales, the only part of Britain where the barberry occurs extensively, the disease caused a loss of 50 per cent. of the crop in many fields in 1919. In the United States at the present time a big campaign is being carried out

for the control of the disease, which causes losses amounting to millions of dollars annually in that country. The Smut of oats (*Ustilago avenae*), known practically wherever oats are cultivated, is estimated to have caused a loss of over £3,000,000 annually in the United States. Treatment will prevent this disease almost entirely. The Stripe of barley (*Helminthosporium graminiae*) causes losses of 20-25 per cent. in Europe, and such losses are entirely preventable. The Grain Smut of jowar (*Sphacelotheca sorghi*) causes heavy losses in India, sometimes as much as 20 to 25 per cent. of the ears being smutted, and the value of the grain destroyed in Bombay is said to exceed £1,000,000 annually, and for India as a whole must be several millions. Seed disinfection has been introduced, and when practised is successful in preventing practically all loss from this disease.

Virus diseases cause immense losses to various crops. In particular leaf-curl of potatoes (in England) is said in some places to reduce the crop by as much as 64 per cent. Previously losses from this disease were put down to "degeneration," but the scientific investigation of the trouble by Quanjer and others has led to more



accurate views as to its nature, and on the basis of this knowledge a method of control has been applied (consisting essentially of using only tubers from healthy stock for seed) which adequately controls the disease. By this means immense sums are saved annually.

Some few years ago Cabbage Wilt (*Fusarium conglutamin*) threatened the culture of cabbages in Wisconsin, but Prof. L. R. Jones succeeded in raising wilt-resistant strains and this saved the situation. Pepper disease in Sarawak, caused by the alga *Cephaleuros mycoidea*, threatened to destroy the pepper industry of this territory. An officer of the Malayan Department of Agriculture was sent to investigate the disease. He quickly diagnosed the causal organism—a well-known one—and suggested appropriate control measures.

A new foe to cacao in West Africa has recently appeared in the form of a new fungus (*Trachysphaera functigenae*). This has been investigated by the mycologist there, and control measures based on these investigations are being put into operation.

Insect pests may be controlled in similar ways. They may be poisoned directly, and so great is the present demand for arsenic to poison the cotton

boll weevil and the boll worm in the Southern States that it has paid to re-open the Cornish tin mines, closed down after the war, for the sake of the by-product arsenic, and this metal is now fetching an almost unprecedented price. Encouragement of birds which eat insects helps and much has been done by introducing predatory insects from other countries. A lady-bird fetched from Australia ate up the orange-scale in California, and this saved a great industry. Some insects lay eggs in the bodies of others and the issuing grub eats up their insides. The introduction of the former into an insect-infested plantation has in several cases proved effective in controlling insect pests.

As I have said, we know less about the round-worms and how to control them. When practicable, as in greenhouses, they may be destroyed by heating the soil.

I must apologise for beginning with a bit of a lecture. I did so because, although I have touched only the fringe of an enormous subject, and that subject is by no means one of the most important of the many subjects which are included in the Science of Agriculture, I want

to make clear that men of science are slowly but surely gaining some sort of control over the devastating forces of Nature. Their work is laborious, never-ending; their failures, but for the fact that even failures teach us something, would be heartbreaking. Their material reward is almost always negligible, yet faith upholds them and they unflinchingly struggle forward.

But to train them for the contest they must have education. They must be taught what advances have been made by their predecessors and what advances are being made by their contemporaries, otherwise they would set out to discover what is already known and their labour would be in vain. Above all they must learn to observe accurately and to record faithfully what they have observed. They must look Nature squarely in the face. The poet Cowley tells us that Harvey, the discoverer of the circulation of the blood,

“ Wisely thought ’twas fit,  
 Not to read Comments only upon it,  
 But on th’ original itself to look.  
 Methinks in Art’s great Circle others stand  
 Lock’t up together hand in hand,  
 Every one leads as he is led,  
 The same bare path they tread,

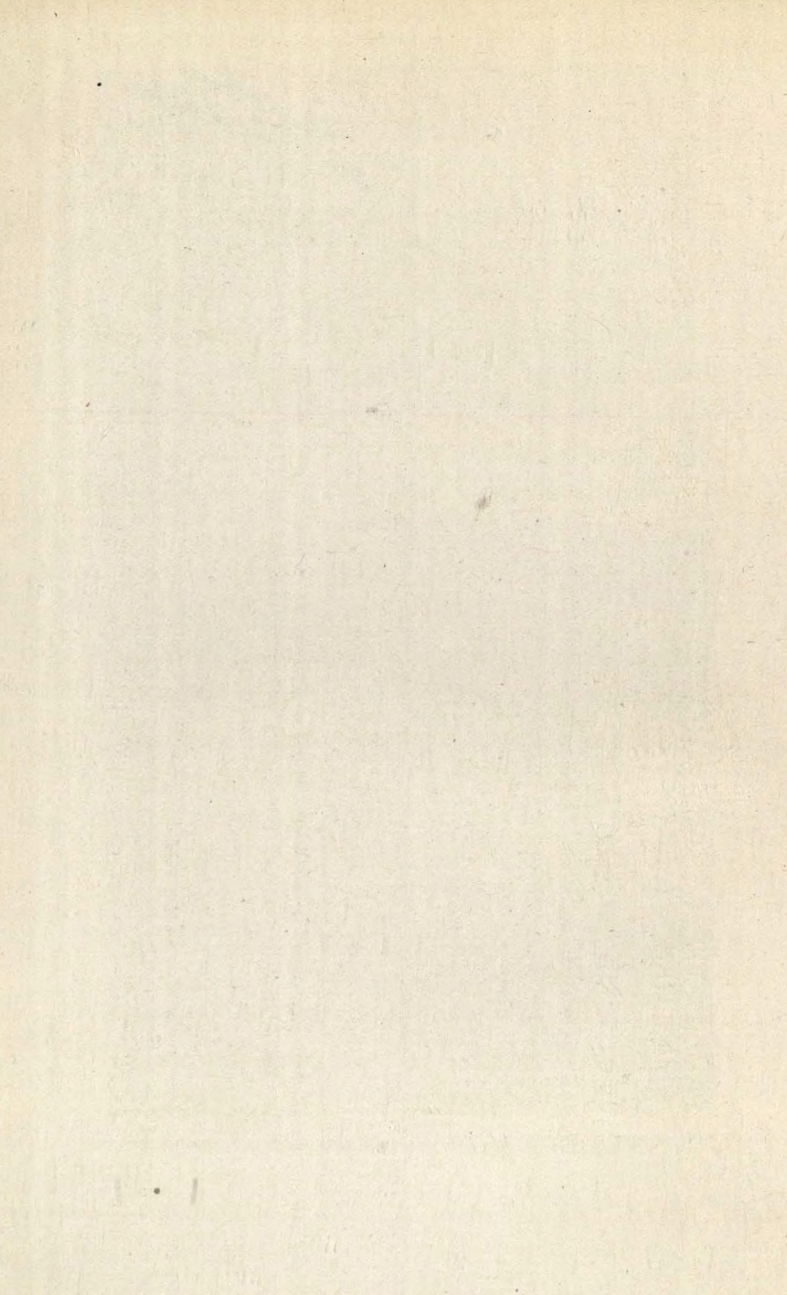
A dance like fairies a Fantastic round,  
But neither change their motion, nor their ground.  
Had Harvey to his road confined his wit,  
His noble Circle of the Blood had been untrodden yet."

The observer must look on "th' original." He must make many experiments and always he has to devise new ones. He must master a difficult technique if he is to work out the life histories of the various enemies of plants. And this must be done in order to discover the weak point, the stage of the life-cycle of the enemy, when and where his attack is most likely to succeed. The training here briefly outlined cannot be carried out at home and alone. It needs some such Institution as the Imperial College of Tropical Agriculture just established in Trinidad, with its Library and Laboratories, and above all with its staff of expert Professors, "men furnished with ability."

So far I have dwelt only on the training of the specialist, the researcher, the man who is going to help us to keep our crops clean and clear from disease, but the Imperial College has another and a most important function to perform, and that is educational. In the words of the Prospectus: "The object of the College is to provide



SUGAR-CANE BROUGHT TO A FACTORY IN PUNTS, BRITISH  
GUIANA



training in the science and practice of tropical agriculture to students intending to become tropical planters, agricultural administrators, or officers; or specialists in different branches of agricultural science and technology; and to offer facilities for the study of tropical agriculture to graduates of other colleges and universities. An important feature of the College is the provision for research and investigation work which its laboratories and fields afford."

It is essentially an educational as well as a research Institution, and in both directions it has made a good start. Opened in October 1922 with an efficient staff and fifteen pupils, several from England, it was at first housed in temporary buildings. But these have been replaced at the cost of some £40,000 by a permanent building, which owes much of its dignity to its fine and stately proportions. The new College stands on a site of eighty-four acres in extent, given by the Government of Trinidad and Tobago. The building, which is the result of much anxious thought on the part of many experts, is completely equipped with all modern scientific appliances and is in all respects worthy of the Empire it seeks to serve.

Placing the College in the island of Trinidad has given rise to a little comment, a little jealousy. But, "after all," as Lord Milner said, "it had to be somewhere." Trinidad is the second largest island in the Antilles, its soil is not only fertile but is very varied, and on it large crops of every kind of tropical produce are grown, and it is free from hurricanes. It has a population of just under 350,000, and its chief town, Port of Spain, is well supplied with such modern facilities as electric light, electric tramways, telephones, a good water supply and an efficient drainage system. A recent authority has stated that it is one of the most sanitary cities in the West Indies. Moreover, another factor played a part in the choice of the island for the new experiment, and that was the generous offer of a very considerable subsidy to the College by the Legislature of Trinidad and Tobago, and a very favourable site for the new College buildings.

The financing of this new College has necessarily been a matter of anxiety to the promoters. The Imperial Government has contributed a grant of £15,000 to be spread over a period of five years. This will cease in 1927. This is conditional on the College carrying on the func-



tions of the Imperial Department of Agriculture. The Colonies of Trinidad and Tobago, Barbados, the Windward Islands, and the Leeward Islands have generously granted subsidies of one-half of one per cent. of their average revenues of the last three preceding years. Handsome contributions have been also given by Mr. J. W. Stephens of Trinidad, Messrs. Cadbury and Fry, the British Cotton Growing Association and from other sources. The fees are purposely kept low; the tuition fee for the Diploma Course is but £50 a year, whilst contributing Colonies and Industries may nominate a limited number of students without any payment of these fees, and other students from the same sources are admitted at one-half the normal rate.

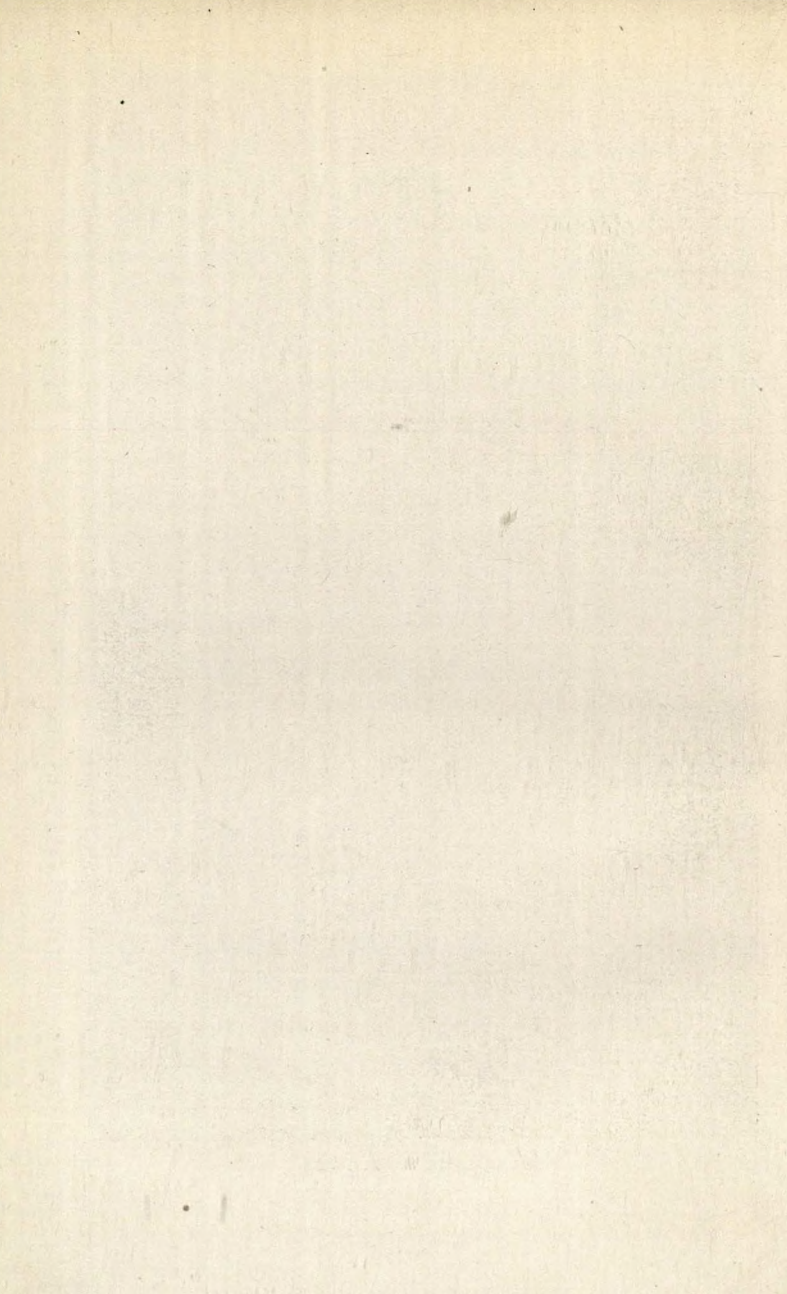
And this brings me to the reason why I have travelled some thousands of miles in the hope that I might address you. We want your help! Will you see if you cannot, as some other Colonies have, grant us one-half of one per cent. of your revenue. Those of you who have been in the United States within the last few years will recognise how insignificant, how negligible this one-half of one per cent. is. I can assure you it is hardly noticeable. Yet how much it would

mean to us who have embarked on this Empire work! We ask nothing for the buildings, the generosity of the Trinidad Planters has provided for them, but we do need money for annual expenditure, salaries of the staff, new and sometimes costly experiments. In return we offer you aid in your difficulties, expert advice when anything goes wrong with the soil or the crops, we will give you the results in increased knowledge in the technology of the preparation of sugar which the Model Sugar Factory now being put up in our grounds will undoubtedly produce. We can offer you reduced fees or exemption of all fees for your young students. And here I may remark that we believe a young man trained at the College for three years followed by a couple of years on a plantation will prove more efficient than one who has spent fifteen years on a plantation alone. The contact with fresh minds and new ideas which arise from College life are wonderfully stimulating and revivifying. It might even be worth while to send your managers for occasional short courses, say on the latest views on fertilisers, which need not last more than two months.

Well! I hate begging; I suppose everybody



SUGAR-CANE IN FLOWER



does. In the words of a great American poet :

“ I never was a grouser,  
 I generally make for peace,  
 But the wheel that does the squeaking  
 Is the wheel that gets the grease.”

You, Gentlemen, represent one of the oldest of His Majesty's possessions beyond the seas, you control a great South American dominion. We ask you to send your sons to benefit by what we can offer you at St. Augustine. South American Republics are already beginning to send theirs ; amongst the new students last October was one from Colombia. Further, we appeal to you for some financial help to make our College worthy of the Empire to which we all belong, to increase its efficiency in teaching and its activity in research.

To-day it is as true as when Bacon wrote in the times of Walter Raleigh, there is a “ new unexplored kingdom of knowledge within the reach and grasp of man, if he will be humble enough and patient enough and truthful enough to occupy it.” Help us to grasp, even if it be but a fragment, some of that “ kingdom.”

## CHAPTER IV

### TRINIDAD

*Miscerique probat populos et fœdera jungi.*

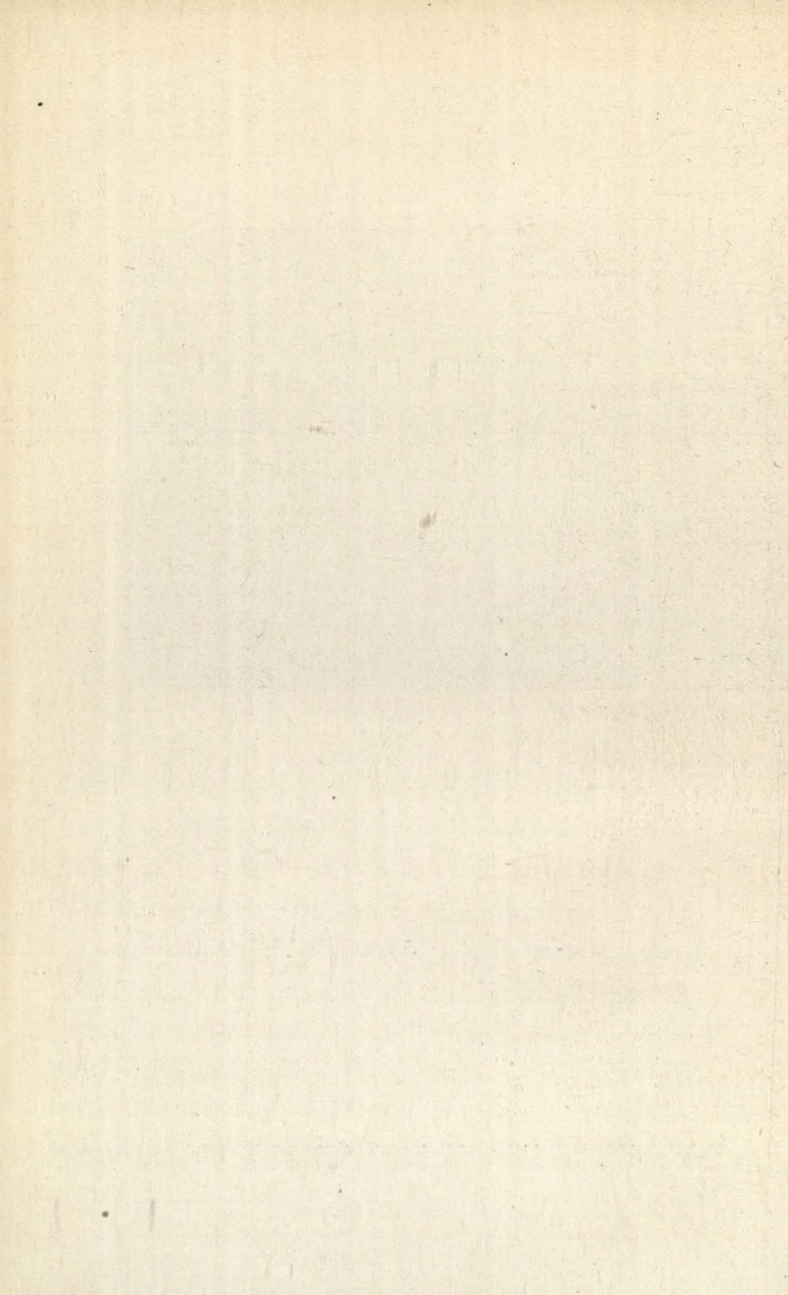
*Æneid, iv. 112 (adapted).*

TRINIDAD is, to use an expression common in the United States, an altogether different "proposition" from Barbados. Here we have no coral rock, no glaring white roads, but an island which is but a chunk of South America broken off and now separated from the continent by the narrow straits known as the Boca de la Serpiente to the south and the Bocas del Dragòn to the north. The latter are broken up by a series of islands of the same geological formation as the mountains on the Spanish Main.

The possession of a small island near the Boca Grande, known as Patos, or Goose Island, has been for many years a matter of dispute between the British and the Venezuelan Governments, and, to make no doubt about it, the former keeps an official on the island whose sole duties are to



DIGGING ASPHALT FROM THE PITCH LAKE, TRINIDAD





hoist the Union Jack every sunrise and to lower it at nightfall.

The native fauna and flora of Trinidad also show South American characteristics, and, alone of all the West Indian Islands, which are otherwise purely agricultural in their products, Trinidad has and exports minerals. These take the form of oil and asphalt. The value of the former, with its derivatives, exported in 1922 was well over three-quarters of a million sterling. The asphalt comes from the well-known pitch-lake at La Brea, on the south-west promontory of the island. It is said to be the hottest place on the face of the globe and we certainly found it very warm.

The lake covers an area of about 114 acres, and is so hard that it can be walked on and carts can cross it, but the walker leaves footprints and the cart-wheels leave deep ruts. Yet in a short time they disappear, for the pitch is very plastic. Its presence explains the excellence of the roads in Trinidad and the absence of dust, which is such a nuisance in Jamaica.

The pitch is exported all over the world, and is very familiar to those who traverse Westminster Bridge or drive along the Embankment.

The value of the export in 1922 was £340,000. The company which holds the concession is British, but the control is American. The employees are admirably looked after, and the township of Brighton, where the white men live, resembles a garden city. The coloured workmen live in a well-arranged and sanitary model village. The same concern also "operates" a pitch lake at Guanoco, some eighty miles up the River St. Juan in Venezuela.

But the most valuable export from the island is cocoa, closely followed by sugar and its products. The Spaniards introduced cocoa into Jamaica, whence it spread to other West Indian islands, and in some of them, *i. e.* Grenada, it has supplanted the sugar-cane, while in others, Jamaica, St. Lucia and Tobago, its cultivation is rapidly extending. Only the disturbed condition of Europe and the lack of purchasing power of its population checks this extension.

This year (1924) is the fourth centenary of the introduction of cocoa into Europe, and the centenary was celebrated this summer by a conference of people interested in that tree and its products. The tree is known as *Theobroma* (Food of the Gods) *cacao*, and is apparently

indigenous in the hot, moist forests of tropical South and Central America, at any rate Humboldt said so. It is still to be found wild in the upper parts of the Amazon and in Ecuador. The soldiers of Cortes, who first landed in Mexico in 1519, found it there, and it was probably this Mexican cocoa which was first introduced into Spain about 1524. Montezuma and his courtiers used to drink a prodigious amount of it.

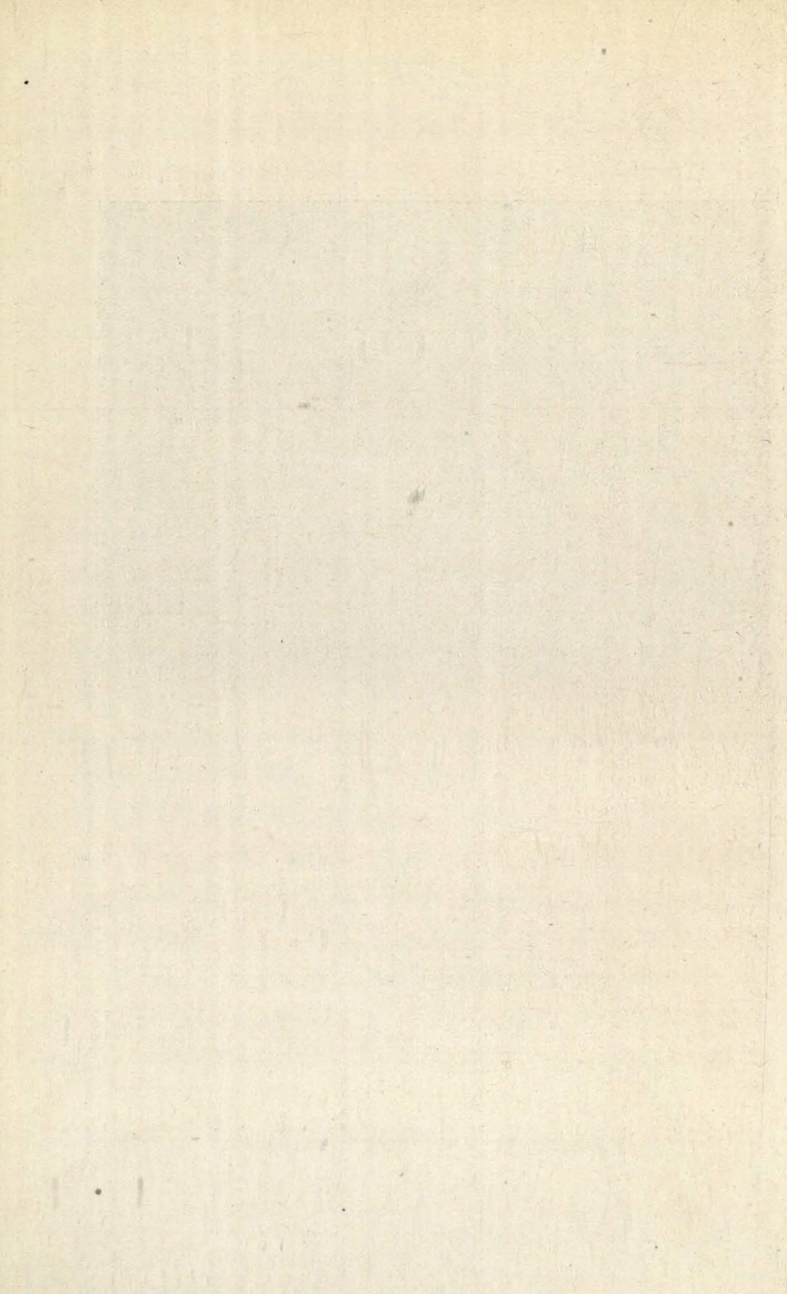
The tree itself is a small one, averaging some fifteen to thirty feet in height. It bears large, glossy, pointed leaves, eight to twenty inches long, but they are not very numerous. One of the peculiarities of the tree is that it sprouts at almost any part of its trunk and of its thicker branches, and these sprouts form the flowers and ultimately the pods. The colour of the pods varies even on the same tree, and may be yellow, red, or purple. The pod is from seven to nine and a half inches long and three to four inches in breadth. The tree bears all the year round, so that the cocoa crop is always in being, but there is a slacking off in the West Indies between the end of April and June, and again from the end of June till October. Each flower produces one pod within which there are five

chambers, and in each chamber there is a row of five to ten seeds, which are sunk in and surrounded by a somewhat delicate pink and acid pulp. These seeds form the cocoa-beans of commerce. The pods have but short stalks an inch or two in length. When ripe they are severed from the stem with a cutlass, or machete, the pods are then broken open and the beans collected in baskets and carried off to the sweating house. Here the pulp is removed by a process of fermentation, the bean being closely packed in boxes and covered with plantain leaves. Fermentation in the hot tropical climate rapidly takes place and goes on for about the inside of a week. When it is complete the beans are spread out on large trays known as barbecues, or boucans, and the dry pulp is now worked off the bean by gangs of negroes who dance or trample on the seeds. The seeds when thus cured are packed for exportation in boxes which roughly contain about  $1\frac{1}{2}$  cwt.

Cocoa trees require a rich well-watered soil and a damp atmosphere. They must be sheltered from cold winds and protected from storms. The young plants are very delicate and have to be reared in nurseries; they are transplanted to



A CACAO TREE IN FRUIT, TRINIDAD



the plantations when they are about fifteen or eighteen inches high. But still they require protection from the elements, and this for the most part is afforded in the West Indies by the Bois Immortel (*Erythrina umbrosa*). This tree is frequently known, owing to its function, as "madre de cacao." They are a wonderful sight in January and February, when they are literally ablaze with flamboyant, brick-red flowers.

Cocoa trees begin to bear in their fourth or fifth year, but are not at their best until some thirty or forty years after. They often live to a great age, and there are still to be seen in Trinidad specimens which are over one hundred years old.

The last statistics show that Trinidad on an average annually exported 26,000 tons of cocoa valued at well over £1,000,000, San Domingo 21,000 tons, Grenada 6000 tons, Jamaica 3500 tons and Santa Lucia 11,000 tons. The Trinidad cocoa has long been pre-eminent in quality, but there seems a possibility of its falling off; at any rate some of the American and European manufacturers of chocolate hold that the beans at present are not so good as they have been in the past. This, it is hinted, may be due to defects in the cultivation; but whatever be the cause,

a very serious rival to the Trinidad cocoa is arising in Africa. Both on the Gold Coast and in Nigeria cocoa is being cultivated, and in the last few years has greatly improved in quality, and at present the African cocoa threatens to be a very serious rival to the West Indian product. In Trinidad the cocoa growth cannot be called intensive. The holdings are often small and the lack of labour and capital keeps the production per acre at a comparatively low level.

Trinidad covers an area of 1862 square miles and is thus somewhat smaller than Lancashire. Barbados, about the size of the Isle of Wight, has but 166 square miles, yet it supports a population of well-nigh half as many souls as its larger neighbour. Further, Trinidad is hilly, indeed mountainous in parts, and this crumpling up of its surface vastly increases the area of its fertile soil. The marvellous beauties of the island are only seen by those who traverse the high grounds, and the clear light of sunrise or sunset immensely adds to the glory of the view. One of the inexpressible beauties of the tropics is the sky at dawn and at eventide, aflame with colour, afire with light. As one silently watched them one felt that someone placed "in a golden chair"



had splashed "at a ten-league canvas with brushes of comets' hair."

But the people of Trinidad will not take to the hills; they seem nervous of quitting the coast-line. In other islands many of those who can afford it have their homes high up on the mountain-side, and this in Trinidad, with its good roads and its innumerable motors, almost all, alas! of American origin, would seem a most reasonable proceeding, but the people will not have it so. Even the Lady Chancellor's road, built by Sir John Chancellor, the late Governor, which runs from the Savannah to the heights of St. Ann's, fails to attract the merchants of Port of Spain. The eligible sites still remain eligible and the building lots still remain unbuilt on. The road, like many other public works in the colony, was made by convict labour, and such convicts as we saw seemed cheerful and content.

Trinidad, discovered on his third voyage by Columbus in the year 1498, has since then been Spanish and English, but during the Revolution many French families, driven from Santo Domingo and other lands, took refuge there, and there is still a large Roman Catholic French element in the population. Names of places are often

Spanish, while the names of fishes, birds and trees are often French. There are Corsicans, Portuguese from Madeira, a few Chinese, over 120,000 East Indians, nearly a third of a total population of about 370,000 head. Much the greater part of the remaining inhabitants are of African descent, perhaps mingled with a little of the blood of the native Caribs. Truly a mixed people, who justify the island's motto:—“*Misericordie probat populos et fœdera jungi.*”

## CHAPTER V

# THE IMPERIAL COLLEGE OF TROPICAL AGRICULTURE AT ST. AUGUSTINE, TRINIDAD

*Via colendi haud facilis*

ONE would like to begin at the beginning, but in the case of the Imperial College of Tropical Agriculture it is a little difficult to say precisely where that beginning lies. In one sense the whole enterprise arose out of the Imperial Department of Agriculture, whose headquarters were in Barbados. This had been established by the Colonial Office in 1899 with the two-fold object of restoring the sugar industry in the West Indies and of encouraging other industries. The Department, under the able guidance of Sir Daniel Morris and later of Sir Francis Watts, and with the help of a competent staff of capable assistants, was markedly successful. By a series of periodical publications, lectures, and aid given to agricultural teaching in schools,

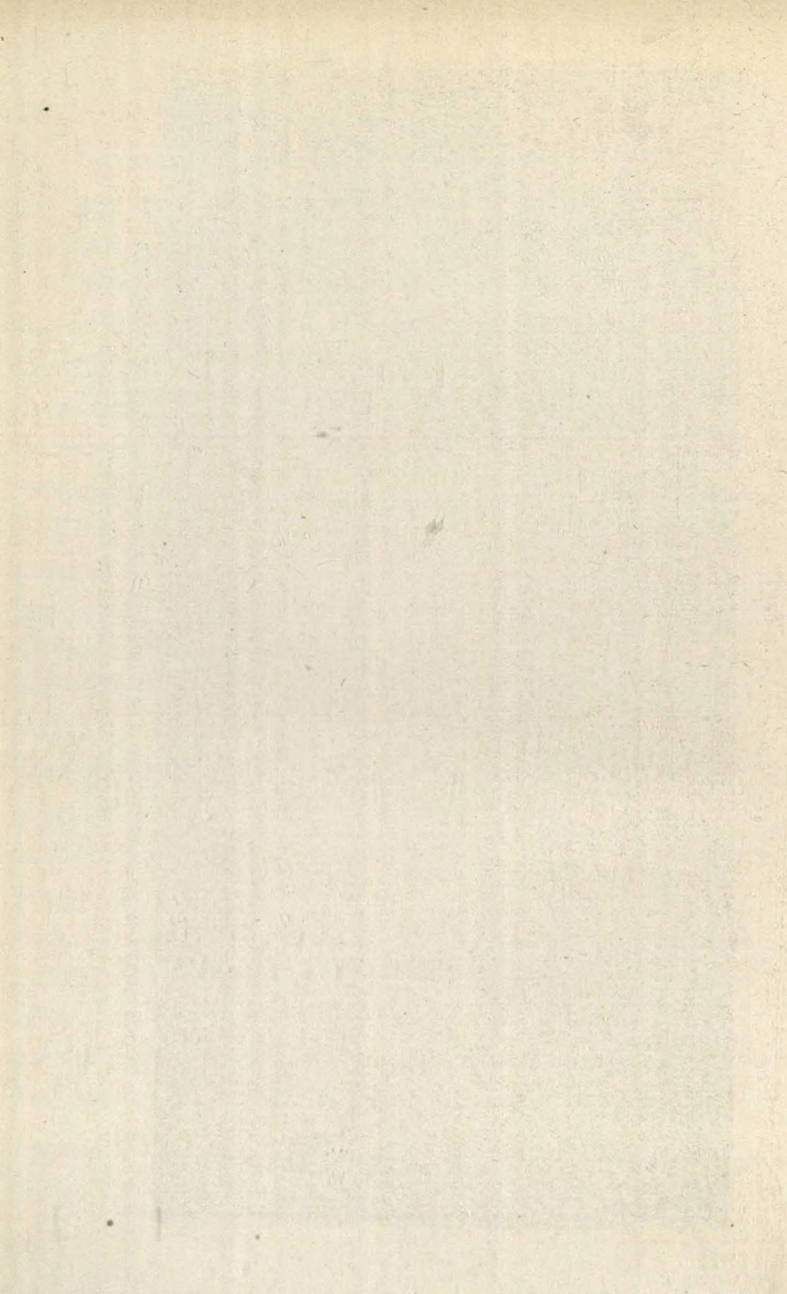
it did much to raise the standard of knowledge amongst those in charge of the varied crops produced in the West Indies. In their difficulties the planters had one to whom they could go for advice, someone to help them with special knowledge. The Department brought in useful economic plants from other lands and tested their suitability to their new surroundings. A most notable example of success in this direction is that of the Sea Island cotton which is practically exterminated in the United States owing to the ravages of the boll-weevil. By the united efforts of the Departments of Mycology, Entomology and Economic Investigation, this valuable cotton has been established in Barbados, St. Vincent, Montserrat and elsewhere. Mr. W. H. Himbury says: "The British West Indies are growing between 4000 and 5000 bales of finest cotton grown in the world—the far-famed Sea Island variety. Double or treble the quantity could be grown, but unfortunately, owing to the depression at this end, there is sufficient produced to meet present requirements."

Good as the work of the Department had been, it had always been hampered by lack of adequate funds, and much of its work was necessarily



THE NORTH-EAST FRONT OF THE IMPERIAL COLLEGE OF TROPICAL AGRICULTURE

(From a Model exhibited at Wembley)



executive and tended to become routine. Towards the middle of the last decade, even in the midst of the clash of arms, a movement was stirring to do something more for the West Indies and British Guiana, and to do it on a large scale. Enlightened merchants whose commercial interests lay in the Caribbean Seas felt the need of more specialised and intensive study of the many problems that confronted them and the need of trained brains to undertake that study.

Since the time that "Adam delved" the principles of agriculture have remained the same and they are the same in the Tropics and in the Temperate Zone, yet how different in detail! Just as disease is disease whether in the heart of Africa or in the Highlands of Scotland, yet its causation and its cure are widely different in these widely separated areas, so agriculture is agriculture all over the world, but when we come to deal with the produce of the soil in the hotter regions of the world the problems it presents and the method of solving them require specialised knowledge and research.

In April 1913, a number of the leading planters in Trinidad passed a resolution in favour

of the establishment of an Agricultural College, and this resolution was passed on through the Governor to the authorities at home, and that enlightened statesman, Lord Milner, who was then Secretary of State for the Colonies, appointed in 1919 a Tropical Agriculture Committee to consider the possibilities.

After many sittings and the taking of much evidence this Committee unanimously reported in favour of the establishment of the new College, and this was effected with little or no delay. Pending the presentation of a Petition to the King for a grant of a Royal Charter of Incorporation, the College was registered under the Companies Acts and the licence to start work was dated the 2nd September, 1921. This date may be regarded as the foundation date of the College.

The Staff of the Imperial Department became the Professors, and their Head became the Principal of the new Institution. This was no small sacrifice on their part, for it meant their transference from the comparatively cool island of Barbados to the much hotter and damper climate of Trinidad. Plans were then drawn out for the new building, but as some

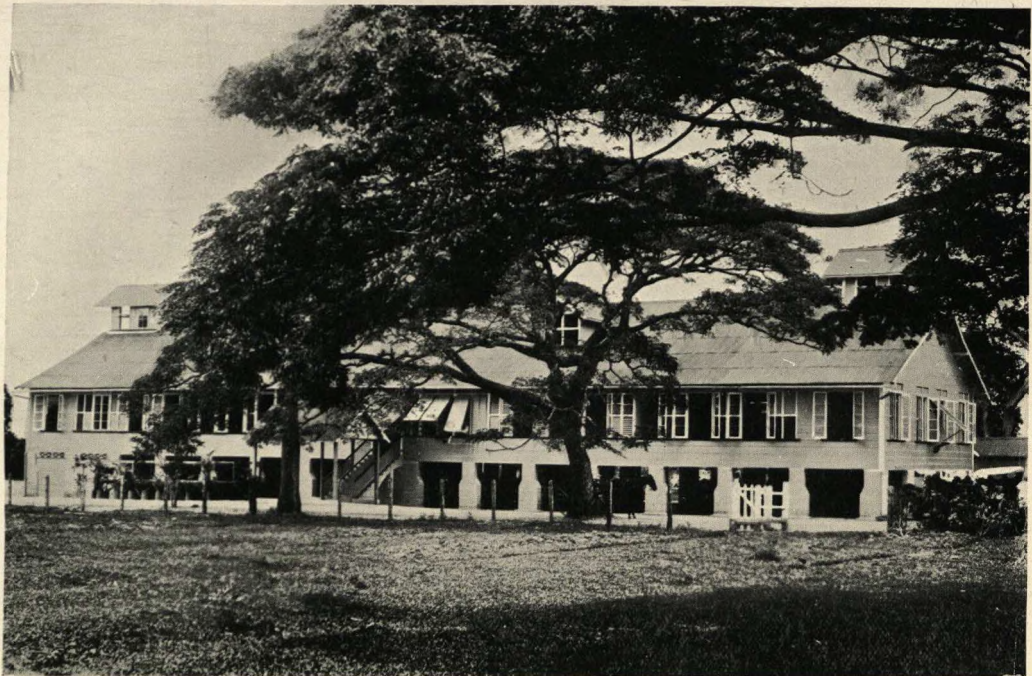


time was required to adjust the views of the Governing Body in London with those of the Executive Committee in Trinidad, there was a little delay before the building could be begun. The Government of Trinidad and Tobago generously let to the College for one hundred and ninety-nine years at, as Mr. Montagu Tigg would say, "the ridiculously small amount" of one shilling a year some eighty-four acres of suitable ground on the Pasture of St. Augustine, seven miles east of Port of Spain. The Governing Body purchased the Estate's residence as a home for the Principal, and a certain number of new houses were built for members of the Staff. A disused hospital was refitted and converted into laboratories and lecture-rooms, and here the College was formally opened by the Governor, Sir Samuel Wilson, in 1922.

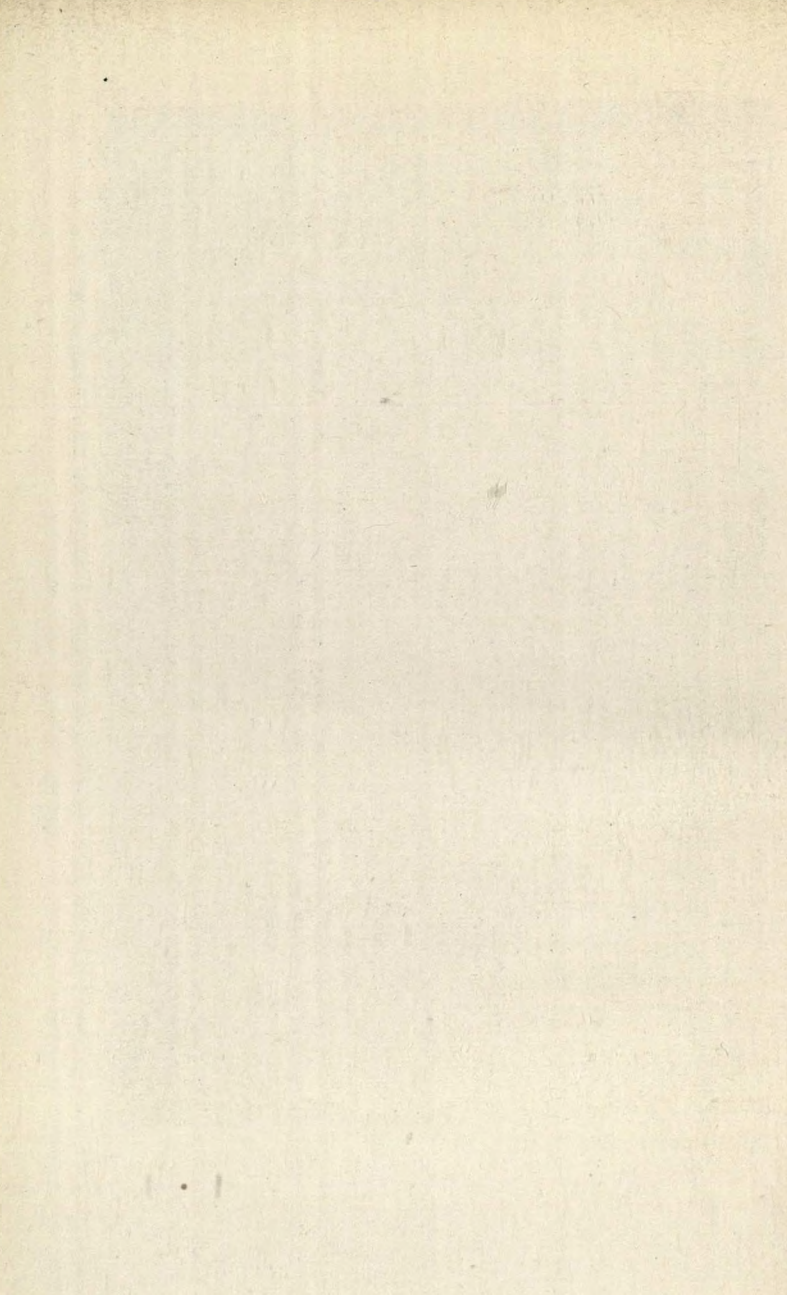
Close to St. Augustine lies the Government stock farm and the land where the Department of Agriculture carries out its large-scale field experiments. The site is full of historic memories, for it was through the orchard here that Sir Walter Raleigh and his men advanced when they burnt the Spanish town of St. Joseph in 1595 and obtained the pitch with which to caulk

their ships. Here, too, in the drawing-room of the residence "Valsayn," two centuries later, the last Spanish Governor, Don Josef Maria Chacon, signed the treaty of capitulation with the English representatives, Sir Ralph Abercromby and Admiral Harvey.

The buildings designed by Major H. C. Corlette in the old colonial style are simple. The dignity of the façade is due to the fine proportion of the several parts. Of course in building laboratories there is always a fight between the Staff, who want an enormous window area, and the architect, who thinks that too much window spoils his design. In this case the architect fully met the wishes of the Staff and the rooms are all well lighted. On the ground floor is an entrance hall with the Principal's room, a lecture room, the library and laboratory devoted to Physics and to Sugar Technology, with the common room and office at the back. The first-floor houses the class-rooms and the Botanical, Mycological, Entomological and Chemical laboratories and rooms for the Professors and Women Students. On each floor there are wide and spacious galleries on to which the rooms open. The building, which is to be



TEMPORARY BUILDING OF THE IMPERIAL COLLEGE OF TROPICAL AGRICULTURE



completed at the beginning of the this academic year—October 1924—has cost about £40,000. On another site in the grounds a model sugar factory has been built during the summer. This has been made possible by the generosity of the British Sugar Machinery Manufacturers, who have given the College sugar-machinery and plant of the value of £20,000.

The new College building is being erected in reinforced concrete, as good gravel and sand were available locally. The necessary cement and steel is of British manufacture. It was subjected to experimental testing before being shipped and small blocks of the concrete are also tested for strength.

The plan of the College has been arranged as a long building with deep galleries, or verandahs, on the east and west sides in the centre part of it, to give protection from the sun. Where these galleries are not provided, other precautions are taken to keep the class-rooms cool. By this arrangement it is possible to allow the prevailing winds, which are from the east, to blow through all parts of the building. This is an obvious advantage in the tropical climate of Trinidad, as the moving air is so valuable in

many ways. The main front of the building, and the principal entrance, face the east. In all rooms provision is made for opening every window, and if the windows are open it will be possible, by means of venetian blinds, to screen the rooms from the sun. Open louvres are also provided at the sides of, and also above, the windows, in most positions, to admit as much air as possible and keep out sunshine. The windows are to be of steel frames and the louvres of teak.

In the general design of the building the aim has been to make and keep it sensible and practical in every way, so that it shall usefully fulfil its purpose as an institution. The first element of sound design in architecture being the provision of a workable plan and the common-sense use of building materials, for structural reasons these have been considered as the starting-points. The architectural quality of any building, if it is to have any, can best be allowed to grow naturally out of these as first principles when the needs of climate are considered at the same time. The deep shadow that will be provided by the overhanging cornice, above the top range of windows and the upper galleries, will

naturally contribute to the architectural effect; and the recessed galleries, or verandahs, will themselves be other and, it is hoped, valuable contributing factors in this direction.

The building now being erected has been planned so that, if it should become necessary to increase the size of it in the future, this present block can be treated architecturally as the north wing of a larger building.

The constitution of the College comprises: (1) A Governing Body which meets in London and consists of a certain number of leading land-owners and merchants interested in the British Tropics and an equal number of scientific men, some of whom are nominated by certain Universities; there is also a representative of the Colonial Office and representatives of the participating Colonies, who can, of course, only attend on the rare occasions when they are visiting home. (2) The Executive Committee, which meets in Trinidad; this consists of the Senior Financial Officer of Trinidad and Tobago and the Principal and six other Governors resident in the West Indies. (3) An Academic Board composed of the Principal and the Professors who deal with the course of studies and

matters of discipline. Of course difficulties arise from time to time owing to the 4000 miles which separate the Governing Body in London from the Executive Committee in Trinidad, but these difficulties have so far been few and far between and on the whole the arrangement has worked with a minimum of friction.

No student who has not reached the age of seventeen is admitted to the College, and those reading for the Diploma must pass an Entrance Examination whose standard is about that of the Matriculation Examination of any British University. Exemption from this test is granted to those who have passed an equivalent examination elsewhere. It is refreshing to find in a College devoted to such a specialised and technical subject as Tropical Agriculture that in "all the classes attention is given to the speaking and writing of clear, concise and grammatical English." The course for the Diploma extends over three years of three terms each, and covers a very wide range of subjects. It is planned so as to give a training to "those desirous of following the business of tropical planting and those who wish to obtain expert knowledge in various branches of tropical agricultural technology."



Students who are already trained in the theory and practice of Agriculture generally are admitted for shorter periods and can attend lectures and classes in the purely tropical aspects of that science. It is further hoped that from time to time the planters and their managers may visit the College for quite short periods to acquaint themselves with the latest developments in the culture and management of the crops they grow.

Special stress is laid on the promotion of research, and the list of the scientific papers written by the present Staff whilst members of the Imperial Department justifies the belief that this most important part of the work of the College will be maintained at a high level. The recent publication under the auspices of the West India Committee of *Diseases of Crop Plants in the Lesser Antilles* by Mr. W. Nowell is proof that the work of investigation into the plant diseases of the Tropics has been and is being successfully pursued. The author, at one time Mycologist to the Imperial Department, is now Assistant Director of Agriculture in Trinidad and Tobago, and here perhaps it may be mentioned that the relations between the College and the Department of Agriculture under the

Directorship of Mr. W. G. Freeman are most cordial. He and his colleagues have been most helpful to the College.

As one example, out of hundreds of problems which confront the researchers at the College we may take the Banana Wilt or Panama Disease. First noted twenty years ago in Panama, within a few years it has destroyed the crops on tens of thousands of acres in that Republic and the neighbouring country of Costa Rica. By 1913 this devastating fungus had virtually ruined the recently established banana industry in Surinam, and British Honduras was heavily infected. Jamaica is also suffering, and in fact the disease seems to be established in almost all countries where the fruit is grown; India, Australia, the Hawaiian Islands and elsewhere. An effective control of the fungus which enters the plant from the soil and attacks the vessels of the root-stock would prove an enormous boon to the planters in both hemispheres. The ravages of this disease fully accounts for the statement recently heard all over the world: "Yes! we have no bananas to-day."

The College, though situate in the West Indies, is Imperial in inception and in purpose. It

hopes and intends to train agriculturists for all those parts of the Empire which lie within the Tropics. It wants to be the John the Baptist of such Colleges, to be the forerunners of other institutions in all the hotter dominions of the King that lie beyond the seas. It has one further great ambition and that is to advance knowledge.

## CHAPTER VI

### JAMAICA

*“Indus uterque serviet uni.”*

By the time we had reached Jamaica sugar had hardened, or strengthened, or tightened, or performed some other of those physical feats that edible commodities do perform, according to the City articles in the morning newspapers, and the sugar brokers were beginning to “dance.” In fact, in Jamaica, as in the other West Indian islands, everyone dances, except the East Indians, who do not seem to include much gaiety in their make-up. As a great Georgian poet has said :

“They dance to work, they dance to play,  
They dance the whole, damn’ livelong day.”

And when, as happens every few days, an American tourist steamer puts in, they dance more than ever, and in every sort of costume. After a visit to the bar—often a prolonged visit, for there are heavy arrears to be made up—elderly

and stalwart men, in white "plus fours" and stockings which hit you in the eye, claim as their partners little bobbed-haired maidens with huge horn spectacles, and with the fixed, stern, determined expression of the "strong, silent man" solemnly tread the intricacies of the foxtrot.

Froude, in his melancholy pages, Charles Kingsley, in his more ecstatic phrases, and, above all, Treves, in the latest and best of all books on the West Indies, have dwelt on the natural beauties of Jamaica, but even with all their literary skill they hardly do justice to the incomparable glories of the island. The Jamaicans, wiser than the planters of Trinidad, have taken to the slopes of the hills. Their plantations cover the mountain sides—their homes may at times be in the clouds. These homes are often of great age, and there is a certain stateliness about them which time alone can give. They are usually built on a basement, and the "piano nobile" is reached by a handsome outside double staircase. The houses seldom extend above one or two floors—there are earthquakes in Jamaica. There is one very large sitting-room, sometimes with recesses, and

it opens on all sides on to the deep verandahs which encircle the house. The furniture is old mahogany, not highly polished, as is that of the waiting-rooms of our Harley Street physicians, but a deep reddish hue, a hue which when met with in insects entomologists term "vinous," a not inappropriate term for furniture which took part in the sumptuous hospitalities of the eighteenth century in Jamaica. On the sideboard is some old silver, often with a history, and always carefully cared for; and there are sure to be some old candlesticks, with tall glass shades to shield the candles from the constant current.

Jamaica is usually associated with sugar and rum, but few people realise that the British West Indian Islands and British Guiana put together produce only about one-sixteenth of the sugar grown in the island of Cuba alone, whose yearly yield totals nearly 4,000,000 tons. The Jamaica contribution is about 42,000 tons.

The learned derive the word "rum" from saccharum, but by the middle of the seventeenth century it was known as rum-bullion, a Devonshire dialect word for a "rumpus." As an old work on the island states: "The chiefe fuddling they make on the island is Rumbullion—a hot,



A COUNTRY SCENE IN JAMAICA

But there is always a snake in the grass, and in the case of the banana this is the Panama disease. The disease was first noted twenty-one years ago in Panama, and within a few years it devastated large plantations in this region and in Costa Rica. In the former Republic some 15,000 to 20,000 acres are now badly infested or have gone out of cultivation. In Dutch Guiana the disease was recorded in 1906, and by 1913 it had virtually destroyed a flourishing industry. It appeared in Jamaica, in the Portland district, in 1911-12, and although the efforts to eradicate the disease have failed, it has been to some extent controlled in this island. With the exception of Colombia, where the crops are well irrigated, the disease extends throughout the banana districts of South and Central America.

The cause of the disease is a fungus belonging to the genus *Fusarium*, which attacks the walls of the vessels of the plant. Spores are produced which are swept upward with the sap and set up new centres of infestation. The fungus enters the plant through the root, passing in from the soil through some cut surface or wound. The spores can live in the earth for years, and are carried from infected to uninfected areas by



wind or water, or in earth adhering to tools or to the feet of the labourers. The fungus can be grown outside the body of the plant and plants can be artificially infected with the *Fusarium*. The outward and visible signs of this inward and fatal fungus are those caused by the checking of the normal flow of sap. This results in the leaves turning yellow and then drying up. The growth of the fruit is also arrested and in time the whole plant wilts, collapses and rots.

Efforts are being made to find or to breed varieties of the plant which will resist the disease. Unfortunately, the favourite and commonest banana, the Gros Michel, is highly susceptible, but by working on Mendelian lines it may be possible to evolve a resistant strain. The banana seldom seeds, and although the authorities at the Imperial College of Tropical Agriculture, as the result of some 22,000 hand pollinations, have succeeded in rearing a certain number of seedlings, they are not yet sufficient in number for experiments on a really large scale.

## CHAPTER VII

### WEST INDIAN NEEDS

THE writer of these articles spent only a few weeks in the Caribbean Sea and visited only a few of the West Indian Islands; had he stayed longer and seen more he would certainly have lacked the courage to write them.

Still, certain things jump to the eye of even the passing guest. Many of the problems which confront the West Indian are common to all the islands and even to British Guiana, which prefers to stand outside the island ring. Yet there is little to bring them together, little to promote common action. Their origin as British Colonies is diverse :

“ For some we got by purchase,  
And some we had by trade,  
And some we found by courtesy  
Of pike and carronade.”

Their Governments differ correspondingly. Some are Crown Colonies, others are more, and

still others are less, under the control of the Colonial Office. One or two, except that the Imperial Government appoints a Governor or an Administrator, are almost autonomous. There is no High Commissioner to represent them as a whole, and there cannot be until the Islands and British Guiana "get together." Inter-insular conferences are held and are to a greater or lesser extent productive of common action, but one cannot but feel that the islands as a whole would be more effective and more powerful in action than they are when each island acts as a segregated unit.

Perhaps a beginning might be made in the Customs; it is vexatious and a hindrance to trade to find a separate tariff in each small island. A tariff is a disintegrating contrivance, and one thing the West Indies want is pulling together. Conditions vary in the different islands, and this variation has hitherto stood in the way of common action, but such varied conditions exist in other communities, and have been overcome.

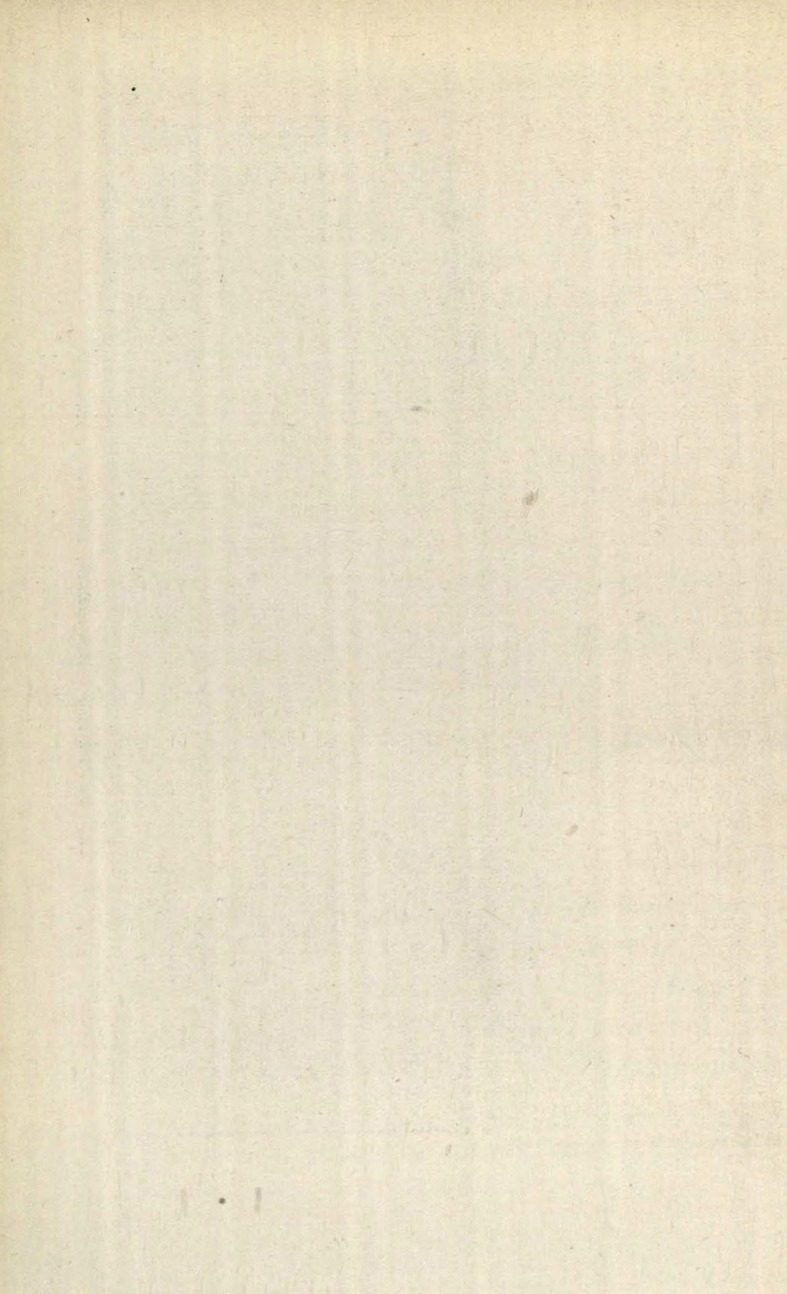
Better communications are needed, both external and inter-island. Indeed, in some respects, they are worse now than they were twenty-five years ago. Then Barbados, the easternmost of

the island group, was the Clapham Junction of the Colonies. The British mail steamer arriving there fortnightly connected with a steamer sailing for Demerara, another for Grenada, St. Vincent and Trinidad, another for the Leeward Islands, and then continued on to Haiti, Jamaica and New York. The route was then reversed. At present Barbados and Trinidad have improved their European connections, inasmuch as they have now both a Dutch and a French liner calling fortnightly, and there has been an immense improvement in the communications with Canada and with the United States. That the Dutch boat leaves England the same week as the Elders and Fyffes's liner seems a pity. Could the two alternate we should have a weekly service instead of a fortnightly one.

The movements of many of the periodic steamers are, however, controlled by the requirements of the fruit trade and, like the vehicles in the "one way" streets in New York City, they advance only in one direction; thus, although the officials of the Imperial College of Tropical Agriculture were able to reach Jamaica from Trinidad to attend the recent Agricultural Conference in a little over a week, it took them five



THE GOVERNMENT BUILDINGS, KINGSTON, JAMAICA



weeks to get back to Trinidad, and this involved an expensive and prolonged halt at Colon. Again, a sugar-planter with estates in Jamaica and in Antigua has to go viâ New York to reach the latter island from the former, "which," as Euclid was fond of remarking, "is absurd." An inter-island steamer would do as much as anything to pull the islands together. It would have to be subsidised, but it would be worth subsidising. At first it would not pay, but freight might follow the flag, and I for one should like to see many freights of Trinidad pitch on their way to Kingston, for it really is time that the Jamaicans did something to abolish the plague of dust which makes their capital—well, very disagreeable to live in.

Writing half a century ago, James Anthony Froude took a gloomy view of the future of the West Indies. The blacks were increasing in number, the whites were decreasing, or at least were stationary. The economic conditions were depressing; sugar was down. In Trinidad "the English inhabitants will, and must be, crowded out," he writes, and again, "in a money point of view the value of such possessions as Trinidad will soon be less than nothing to us."

“Jamaica and the Antilles given over to the negro majorities can only become like Haiti and St. Domingo.” But it is not wise to prophesy unless you know, and Froude did not know. Although, under the stimulus of stray Americans, who thought there “was money in it,” he considers the possibilities of an export trade in fruit, he failed utterly to foresee the enormous commerce which has grown up in this commodity in recent times between the Antilles, the Spanish Main, and Europe and North America.

The United Fruit Company, the Atlantic Fruit Company, and other similar organisations have brought undreamt prosperity to Jamaica, which might be extended to other islands. Numerous fine steamers, with constant sailings all the year round, are devoted to the transport of the banana. Some of these also transport passengers, and no more comfortable and better-found ships sail the ocean. If a bunch of bananas wants to understand what real comfort is, it should disguise itself as a gentleman and take a steamer ticket to Avonmouth.

The West Indies are old settled countries. They have traditions. There is nothing raw



and unfinished about them. The self-made man who, having made himself, thinks he can make anything else, but never quite finishes it off, is not as obtrusive here as he is apt to be in some new countries. The society is a cultivated society, and if, as is often the case in small communities where everyone knows all the others, there is a good deal of gossip, it only makes the atmosphere more like that of *Cranford*. In the islands there is an air of culture, and this is most marked on the scientific side. The Imperial Department of Agriculture is largely responsible for this; but many of the larger plantations now employ their own experts in fungoid and insect disease, in chemistry and engineering, and in soil management. Most of these "men furnished with ability" hold University degrees, and their presence ensures that the colleagues at the new College of Tropical Agriculture do not suffer from intellectual starvation. The newspapers, natural history museums, literary societies, and libraries are of a high order of merit, and compare most favourably with those of other lands situate between the Tropics. The book-shops, however, are very few and very poor. In San José, the capital of Costa Rica, they are better

and more numerous than in all the islands I visited, but they all bear German names.

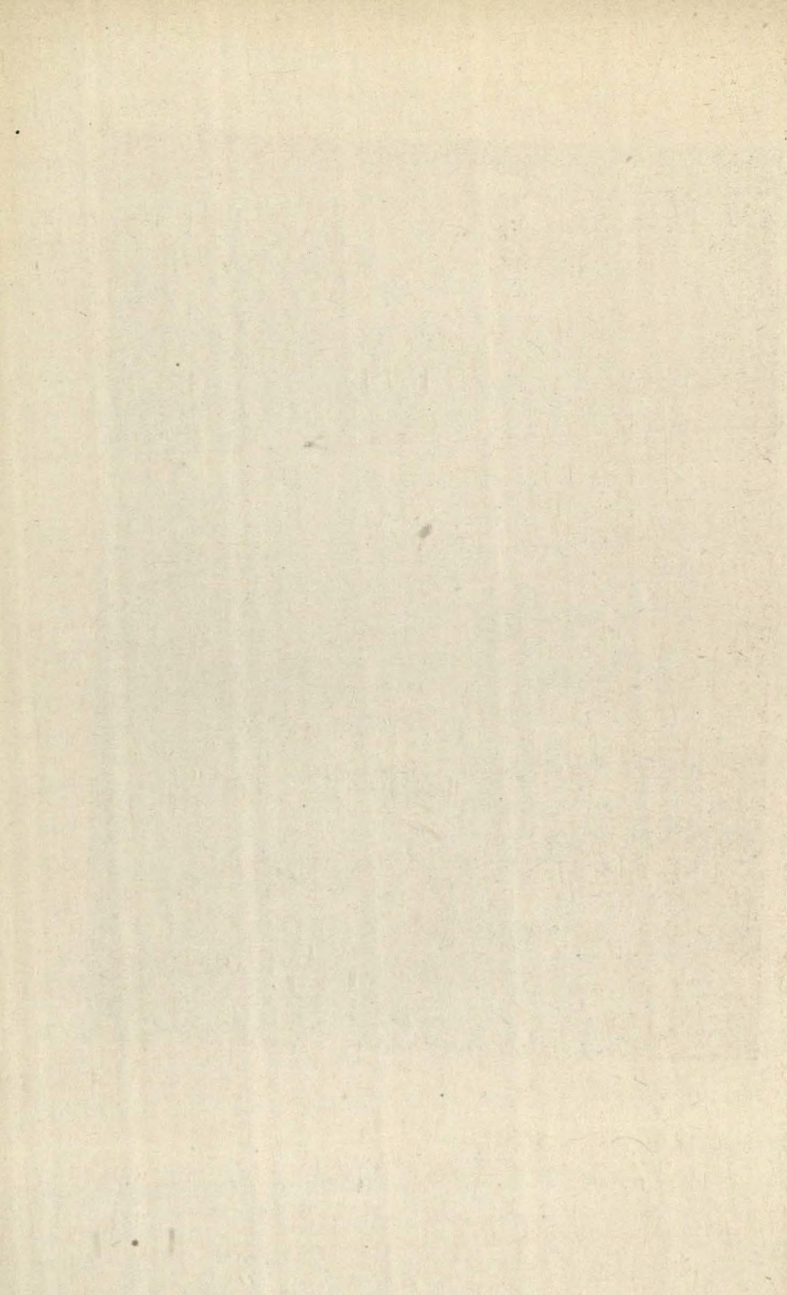
Amongst the peoples of the earth the West Indian negro is perhaps the happiest. He has a sense of humour. He quarrels most vehemently with his mouth, but he is not given to crime. To use one of his own phrases, he has a "negatory predisposition" to work, yet if adequately paid he works, and works hard. He is always joking, laughing and smiling, and he who smiles in this world surely deserves a lot of marks. His philosophy ought to teach us a lesson. I once asked a darkie down in Louisiana why negroes hardly ever commit suicide, and he replied, "Well, Boss, it's jes' like dis. White man sit down an' worries about his troubles till he jes' goes an' shoots himself. Black man sit down and worries about his troubles an' jes' nachally fall asleep." Surely the better way.

Owing to her Empire, England has her sons scattered throughout the world, "homesick to a man" Emerson tells us, and anyone who visits the West Indies will see for himself, that, in the words of Mr. La Fayette Kettle, this is "dreadful true," at any rate it is true of those who were born and bred in Britain. "Contrariwise," as



*[Photo Publishers Service.]*

TEN LITTLE NEGRO BOYS SITTING IN A ROW



Tweedledee would say, the native West Indians at home hunger for the sunshine, the warmth, the glittering beauty of his beloved islands. As they sail towards the setting sun they say :

“ We shall go back by the boltless doors,  
To the life unaltered our childhood knew—  
To the naked feet on the cool, dark floors,  
And the high-ceiled rooms that the Trade blows through ;

To the trumpet-flowers and the moon beyond,  
And the tree-toad’s chorus drowning all—  
And the lisp of the split banana-frond  
That talked us to sleep when we were small.

The wayside magic, the threshold spells,  
Shall soon undo what the North has done—  
Because of the sights and the sounds and the smells  
That ran with our youth in the eye of the sun.”

In some respects the conditions of those who live in the Tropics are monotonous. The days do not lengthen and shorten, the sun rises and sinks at the same time all the year round, the temperature varies but little. The world is ever green. Unfortunately the folks out there have few hill stations, and there are not many places where they can find a change of surroundings or of food. They want to visit home, but they are not rich and can seldom afford to do so. They ache to see a tree with its leaves off, its

branches and twigs etched across a wintry sky; they yearn to cross the hideous Charing Cross railway bridge, and to smell the mutton-chops in the Strand. They know there are apple-blossoms in the West Country. They want to see their boys and girls at school at home. "Yes! We know it's the Exhibition year, and the island's putting up a good show, but we can't afford to come this year; but we're saving up, and perhaps in '27——"

Although many of them have been born and bred in the islands, they never cease to call Britain "home." They read and re-read such English magazines and weeklies as come their way. They ask you all about it.

"Oh, God! One sniff of England—  
 To greet our flesh and blood—  
 To hear the traffic slurring  
 Once more through London mud."

· · · · ·  
 "How stands the old Lord Warden?  
 Are Dover's cliffs still white?"

## CHAPTER VIII

### THE WEST INDIES AND AMERICAN EXPANSION

WHEN Froude visited the West Indies, thirty-seven years ago, he seems to have said to himself, "Change and decay in all around I see." He even predicted the collapse in the islands of European civilisation, and its replacement by that of our African brothers.

But things aren't so bad as all that. Froude met one or two Americans who foresaw there was money in the fruit of the islands if properly marketed, but he could not possibly have foreseen the tremendous present development of the fruit industry, largely fostered by the United Fruit Company, and supported, as far as Jamaica is concerned, by the Atlantic Fruit Company. The former is practically an American concern, and the latter is probably financed by dollars. Nearly every day in the week one of their steamers leaves Kingston in Jamaica for some

port on the southern and eastern seaboard of the United States laden with bananas; and the industry has now assumed such enormous proportions that no fewer than 16,000,000 bunches have been exported from this island in one year.

Like so many others, this industry was started by an Englishman, the late Captain Baker, who commanded a small schooner trading between the island and America. He used to take back a few bunches of bananas for his friends in the United States. He found the fruit stood the voyage well, and the bananas were so much liked that he began to develop the trade, which the Americans presently captured. To a great extent they also control the banana market in British Honduras, in Panama, in Colombia, and in Costa Rica. From Port Limon, in the last-named Republic, there are fortnightly sailings of steamers for Avonmouth which each carry some 80,000 bunches to England with an average of about 140 bananas to a bunch. No fewer than twenty vessels are engaged in bringing this fruit from Jamaica and Central and South America as fast as they can carry them to our ports. The fruit is handled both in the Caribbean Sea and at



Avonmouth by mechanical contrivances which, if put up in the Port of London, would probably be destroyed by the Trade Unionists.

The immense development of the trade conducted by the Americans has given them a strong interest and a firm footing in many of the islands and on the Spanish Main. America also has a powerful interest in sugar-production. Although the United States has given freedom to the Cubans, it still exercises a very great influence over their island, and Cuba produces annually nearly 4,000,000 tons of sugar, whereas the whole of the rest of the West Indies and British Guiana together produce not one-sixteenth of this amount.

As one travels about the West Indies or calls at the ports of Central America, one is apt to notice that the American flag, or very small reproductions of it, are flown by all the drivers of the little cabs or the motor-cabs that ply for hire. The American seems happier, or perhaps feels safer, if he has the Stars and Stripes sticking up ahead of him; or, at any rate, the natives think he feels like this. The "Hôtel Americana" is much more common than the Hôtel of any other nation. The railway train that

takes you up from Port Limon to that charmingly clean and healthily placed little capital of Costa Rica, San José, starts with a bell instead of with a whistle. At San José most of the cooking is done by electricity, and the machinery is again all American. It is cheaper than European machinery, and "parts" are more easily procurable. According to some housewives, the American is more ready to adapt his machines to their requirements than is the Britisher. This undoubtedly seems to be the case with the tractors which are now coming so largely to be used on the bigger estates in the West Indies and in British Guiana. Even in the Bermudas the Marine Zoological Laboratory, under the charge of Professor Marks of Harvard, and in British Guiana the Land Laboratory, under that of Mr. Beebe, of the American Museum of Natural History, are financed by the United States. There was recently some prospect of the French-owned cable in the Antilles being sold to the All-America Cables Company.

There is something rather devastating about American culture. It produces a perfectly dead level, and seems to flatten out things as the culture of no other community does. Places

that Americans frequent, like the Bahamas and the Bermudas, seem compelled to have American hotels and bars such as Americans seem to hanker after, providing nothing but American drinks. Their motor-cars are, of course, everywhere, owing mainly to the business capacity of Mr. Ford.

Thanks to the munificence of Mr. J. D. Rockefeller, and the public-spirited administration of the Rockefeller Foundation, America is doing an immense work throughout the world in the way of preventive medicine, clearing up and eliminating disease. The Foundation has stations all over the Tropics. In the New World they are wrestling with yellow fever, and, all round the world, with another terrible disorder which attacks dwellers in the warmer parts of our globe, the hook- or tunnel-worm disease. America has stations all through Central America and the West Indies, as well as in Dutch Guiana and Brazil. In the last Report of the Foundation attention is drawn to the fact that, "to one familiar with the history of yellow fever, the fact that for a whole year Central America, the West Indies, and all but one country of South America were free from the scourge which

for nearly two centuries ravaged these regions, is strikingly significant. It is hard to realise that this latest phase of the fight on yellow fever began only five years ago."

The accompanying charts show what has been done in this century towards the elimination of one of the most dreaded of all diseases. "Yellow Jack," as it used to be called, played a large part in the pirate stories which we all delight to read. Talking only this spring at Baton Rouge with an inhabitant of Louisiana who remembers several outbreaks, one learned that it exercised an absolutely terrifying effect even on the bravest and most hardened of men. When it broke out, the inhabitants of the infected district became panic-stricken, and it was only the most clear-thinking of doctors and men of science who could stand up against its terrors. As the charts show, it was reduced in 1922 to one centre in Mexico and three in Brazil. Doubtless these have now been cleared up or shortly will be.

Then, again, America has tackled the problem of hook-worm disease, which has, like malaria, a debilitating effect upon all who suffer from it. Since the brilliant discovery of the life-history of this intestinal parasite by Loos, at the Medical



Yellow Fever in retreat. Maps of the Western Hemisphere showing reduction of infected area. From *Rockefeller Foundation Report for 1922.*

School at Cairo, who has shown us how the parasites are "lost and regained," it has proved comparatively easy to eliminate the source of infection; and by repeated experiments it has proved feasible to eliminate the worm from the system. The condition of the "poor, mean white," with a feeble mind and arrested growth, was almost entirely due to this parasite. The negroes are more immune than white people. The Rockefeller Foundation has, by a series of stations throughout the West Indies and Central America and Brazil, done much to eradicate the trouble from that part of the world. For instance, they have a field-staff working on this subject in the following islands: Antigua, Jamaica, Porto Rico and Trinidad, and also in Fiji; and in the following countries: Brazil, British Honduras, Colombia, Dutch Guiana, Guatemala, Honduras, Nicaragua, Panama and Salvador. As is natural, Porto Rico, which passed into the possession of the United States in 1898, has been the most successfully treated. At any rate, Porto Rico has a rapidly increasing population of over 1,250,000, and, unlike most other West Indian islands, the proportion of whites to blacks is two to one. All these beneficent activities have

naturally caused a feeling of gratitude and interest towards the United States in the minds of the peoples around the Caribbean Seas; and further, the constant presence of a large army of doctors and sanitary inspectors has increased the interest of a body of cultivated American citizens in the islands and countries in which they are working.

Since the beginning of last century the area of the United States has been about doubled. The gigantic province of Texas seceded from Mexico early in the nineteenth century, one of their reasons being—and this is probably unique in the history of secessions—that the Mexicans inadequately provided its inhabitants with opportunities for education. The Republic of Texas was organised in 1836, and was annexed to the United States by a joint resolution signed by the President Tyler (1841–1845) in the last few days of his tenure of his office. The boundary line was fixed at the Rio Grande, and thus an enormous piece of territory was added to the States. Florida had been purchased in 1819. The Mexican War of 1848 ended in the huge territories of New Mexico, Utah, Nevada and California passing under the administration at Washington. Louisiana, stretching up the

western side of the Mississippi, which Napoleon had forced the Spaniards to give up in 1800, was somewhat suddenly bought from the French for the ridiculously small sum of 15,000,000 dollars, of which nearly 4,000,000 dollars were used to pay the claims of Americans for losses alleged to have been caused by the French. At one time Napoleon Bonaparte is said to have contemplated a great empire centred round this area. But Nelson put an end to all that.

Their later purchases include Alaska, the gigantic province they bought from Russia in 1867 for 7,200,000 dollars; and the Danish Virgin Islands, St. Thomas, St. Croix and St. John, which were transferred from Denmark to the United States in 1916 for the comparatively small amount of 25,000,000 dollars.

There are writers of standing in America, such as Mr. W. C. Gregg, who maintain in regard to the war debts of European countries to America, that—

“ These debtor countries should sell us their West India Islands and some of their art treasures.

“ Both England and France have islands which are not income-producers to them, and probably would not be to us. But their transfer to us



would be substantial considerations, which should not cause loss of pride any more than our purchase of Alaska from Russia or the Virgin Islands from Denmark. But if, perchance, pride is involved, there will be a loss of that, anyway, or of something worse, before those billions of principal and billions of interest are paid."

But the United States is good at a bargain, and the few million dollars we might possibly get from them would not go far to cancel those "billions of principal and billions of interest" that he refers to.

Both by the beneficent work of America through the Rockefeller Institute and by the commercial work of such firms as the Fruit Trust, America's interests are firmly established in the islands of the Caribbean Sea and the countries which border it. The work done at Panama at a cost of 375,000,000 dollars is said to be paying, but one can hardly credit that when one thinks that the widows of three of the men who have made that work possible receive but an exiguous pension of one or two hundred dollars a month, while their dead husbands, Drs. Reed, Carroll and Lazear, received but one step in their military rank. Still, the Americans are now getting disturbed about the safety of

their canal. Their naval manœuvres this spring have alarmed them, they have shown how vulnerable the Canal Zone is.

They have the Republic of Panama well in hand. By treaty the United States prohibits Panama from maintaining any military force, so that such protection as is available for the Canal must be in the main American.

The position in Mexico is rather different. At the present time Mexico is practically Bolshevik. "The labour movement in Mexico finds its inspiration in the doctrines of communism and anarchism, hence the red and black flag as its symbol." A distinguished Mexican writer says, in the columns of the *Outlook* :

"It is impossible to know what the ideals of Mexican labour really are, because our workers are lacking in political and social education and are sunk deep in barbarism. They understand one thing, and that is that capital must go and that they must enjoy life at high wages. The foreign demagogue, in this case, has done effective work."

Further :

"Mexico is suffering from an epidemic of strikes, which is slowly but surely destroying the

economic life of the nation. Government statistics for the month of June, recently compiled, show that no less than fifty strikes, involving 17,633 workers, were conducted in the States of Puebla and Vera Cruz alone."

Still, as Carlos B. Zetina, who is said to be the wealthiest manufacturer in Mexico, says :

"We are badly off because we have not yet learned to know ourselves. We are living in a dream. We are trying to build a Utopia, a castle in the air, as it were, when, as a matter of fact, we are still to emerge from a very primitive condition. Our Government is in the hands of dreamers, men who will not see that the masses are unprepared for novel schemes. There was never a time, as far back as I can remember, when there was greater confusion in this country. We have had not one revolution, but a series of revolutions, and, to be frank with you, we were better off before we started. The people have gained nothing. They have been promised heaven by all the generals of the revolution, but it seems that they have received the other region instead."

It does not seem very probable that America will officially intervene during the present crisis, in the country of her southern neighbour, though her interest in the development of the Mexican

situation is very real. But while it is true that, on the Spanish Main and in the West Indies, the American penetration has undoubtedly been as beneficial from a worldly point of view as from the standpoint of health and trade, I am, on the whole, inclined to think that, in spite of high wages and the general amelioration of their surroundings, the West Indian negroes, at least, would prefer to remain under the British flag. Further, the old, old cultured West Indian families know full well that the liberty they possess under our King is as wide, wise and sane as any liberty enjoyed under any other rule on this earth.

## CHAPTER IX

### ETNA

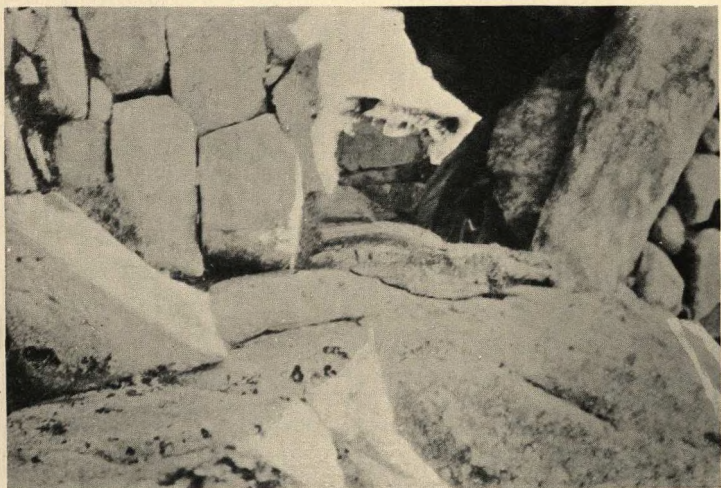
I SUPPOSE I am one of the very few people who have gone almost directly from Costa Rica to Cos. But the transition was not so sudden as might appear. One did not plunge suddenly from a Latin into a Greek civilisation. One approached the matter, as Agag trod, "delicately." We started for Greece from Naples, where the main streets still follow the lines of the old Grecian roads. Thence we passed to Syracuse, whose intimate connection with the ancient Greeks was more profound and more lasting than even that of Southern Italy. Sailing in our yacht towards Syracuse we passed the great Sicilian volcano; and here I am going to interpolate a short account of a visit I paid in 1883 to Etna, which was then in a state of great activity.

Just forty-one years ago, I spent a year at Naples, working in Dr. Dohrn's well-known

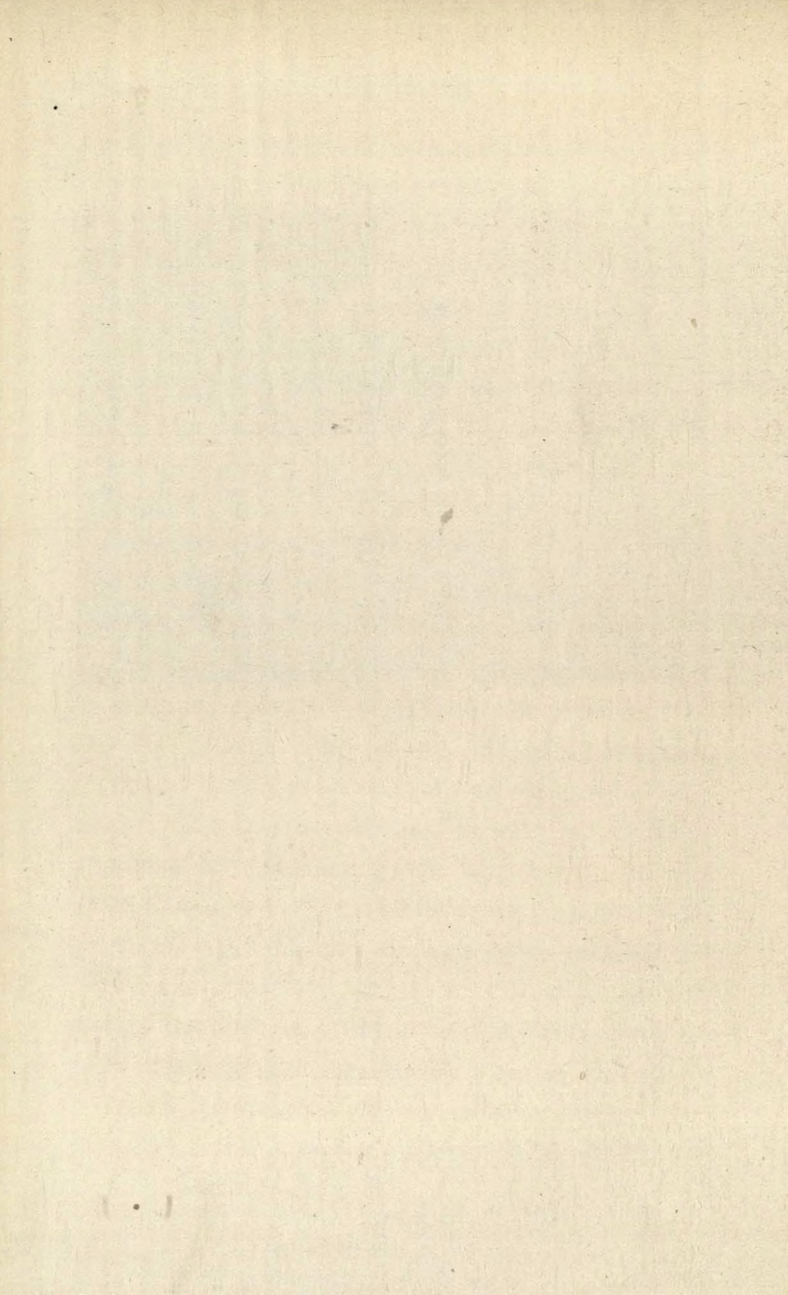
Stazione Zoologica. In the earlier part of 1883, news came that Etna had broken into an eruption. whereupon two or three of us immediately set sail for Messina to see what was going on. We had all of us some experience of volcanoes, for, under the guidance of the well-known expert in vulcanology, Dr. Johnston-Lavis, we had more than once climbed Mount Vesuvius when that mountain was more or less active.

We had learned from observations in Ischia and elsewhere that—if one may use an Irish bull—the safest place in a house, if you cannot get out of it into the open, is in a doorway in one of the inside walls; the outer walls are apt to tumble outwards or sometimes inwards, but the last things that remain in an earthquake-shattered house are the lintels of the inside doorways. In due course we arrived at Catania. As constant tremors shook our hotel, for the first hour or so of our well-earned rest, we were constantly in and out of our beds, making for the inner doorways, until we got tired of that sort of exercise, and went to sleep and woke up next morning none the worse.

In 1883 the lava-flow was more or less towards Nicolosi. This is the village from which the



THE CAVE AT DELOS WHERE APOLLO WAS BORN





traveller generally makes his ascent to the crater. Nicolosi is about two-fifths of the way from Catania to the summit, and lies north with a little west in it, of that city. There were a good many parasitic cones being thrown up on the higher mountain slopes, all vomiting lava. Passing upwards a kilometre or two, we encountered the flowing lava. By the time we got near it, the molten stream had broken up into scoriæ, that is to say, into an ever-advancing mass of huge cinders or clinkers. These isolated clumps of lava, each with a thin coating of hardened material, but intensely hot inside, formed a moving rubble which glowed with a dull red heat, very noticeable at night-time. The pace of the lava-flow was not very great, and we could approach within a few yards of the on-coming tide with perfect safety; it was the heat alone that kept us back.

The Sicilian is an excitable person, but the villagers showed much courage in the disaster that was falling on their crops, and their households, and their possessions. There did not seem very much danger as one watched the rolling tide of lava sweeping forward, but, of course, "one never can tell." Dr. Bonney records that in the 1843 eruption;

“ Many people were near its advancing front, engaged in the rescue of property. Suddenly its extremity was seen to swell up like an enormous blister, and then to burst, discharging a quantity of steam, with a volley of fragments, solid and liquid. Sixty-nine persons, it is said, were either killed on the spot or received fatal injuries.”

The local method of dealing with the catastrophe was to plant in a semi-circle in front of the oncoming stream little crosses of bamboo, each supporting a portrait of Sant' Antonio di Padua, or of Sant' Antonio the Hermit, with his pig. As the stream advanced these were overwhelmed and promptly burnt. Then another semicircle of bamboo crosses would be planted a little below, so that when ultimately the flow ceased, there was fronting it a row of crosses bearing pictures of these eminent saints; and the priests who had been asperging the molten lava with holy water, which immediately turned to steam, exclaimed delightedly: “ *Ecco il miracolo!* ”

I have not been able to find the name of any saint who specialises in earthquakes and eruptions. In Chile Saint Saturino and Saint Francis Xavier are chiefly relied on. I am inclined to think that in Sicily the two Antonios

on whom the people of Nicolosi placed their faith were saints whose relics happened to be in some church in the town. The St. Egidius, the patron of cripples (St. Giles), whose intervention has so recently saved Linguaglossa, is again in no way especially connected with volcanic eruptions; but at any rate the peasants and the priests believe in the efficacy of his staff, and his shrine is at present loaded with hundreds of gifts. Rings, brooches, ear-rings, watches and chains adorn his statue, and many a *contadina* is to-day without ear-rings. The inhabitants of Castiglione, who thought that the selfishness of the folk at Linguaglossa was diverting the stream towards their own town, do not appear to possess so effective an agency.

Superior people are apt to deem such proceedings superstitious. But, at least, these much-stricken peasants and priests show a great faith and a great hope; and, after all, at the present time there is not too much faith and not too much hope in our troubled world. These simple folk had faith which stayed the movement of mountains.

I have always had the greatest possible respect for and sympathy with saints. Hence, whenever

I come across one I like to follow him up a bit. Sant' Antonio the Hermit lived after 300 B.C. and was the founder of Monachism. He was one of those peculiar people who became a hermit in the Egyptian desert, living in retirement between the Nile and the Red Sea, not at all an earthquaky spot; and one would imagine ill-adapted for the rearing of pigs. The connexion of his symbol, a pig, with so holy a saint has never been properly explained. Dante mentions the Saint and his symbol.

“ Di questo ingrassa il porco Sant 'Antonio,  
Ed altri assai che son ancor più porci,  
Pagando di moneta senza conio.”

This has been rendered by Cary as—

“ Saint Anthony  
Fattens with this his swine, and others worse  
Than swine, who diet at his lazy board,  
Paying with unstampt metal for their fare.”

St. Anthony of Padua, who was born in 1195 at Lisbon, again does not seem in any way especially associated with earthquakes. When he was twenty-five years old he became a Franciscan monk and, like the founder of the Order, he preached to animals; but whereas the latter

exhorted the birds he edified the fishes in the River Brenta. He was a great preacher, and although he died at the early age of thirty-six he left a profound impression on the Church. He is always depicted carrying the Infant Jesus on his arm and playing with the Babe. Throughout the whole of the Veneto St. Anthony occurs in the great majority of wayside shrines and he has, even at the present day, a large and devoted following.

St. Giles, as far as one can make out, had, again, nothing whatever to do with earthquakes. He was a certain Athenian known as *Alyídios*, and said to be of royal descent. After the death of his parents he gave all his goods to the poor and sailed for Marseilles. Then he went to Arles and shortly afterwards retired, as the habit of saints so frequently was in those times, into the desert, living upon herbs and the milk of a hind which periodically visited him. He was taken up by the King of the Goths, who built for him a monastery. The date of this distinguished saint is rather uncertain, some hagiologists holding that he flourished during the sixth and others during the seventh or eighth century. He was certainly favoured and supported by royalty, and

his monastery flourished till the Saracens destroyed it in 721. St. Giles, where the monastery under the protection of Charlemagne stood, was the scene of many a pilgrimage, for St. Giles was in great vogue as the patron of lepers, cripples and beggars. As these *poverini* were pretty widely scattered in mediæval times throughout the world there are a great many chapels dedicated to him, about 150 in England alone. The Cathedral of St. Giles in Edinburgh used to boast the possession of one of his arm-bones, but we do not hear much about that relic nowadays.

Looking down and around from the summit of the crater when the mountain is at rest, one sees various darkened splashes, somewhat blasted areas on the mountain-side which indicate previous lava-flows. The widest of these is to the west, and it just reaches the village of Bronte, from which place Admiral Lord Nelson took his Italian title. There is another area to the north, and another to the east, and finally, a large one beginning at Nicolosi, when in 1669 the lava-stream, ever increasing in volume, flowed down until it reached the sea, and made the waters boil.

“The tepid tides grew warmer by degrees,  
Till parboiled fishes swam the astounded seas.”

Still, the whole laval area of the mountain hardly covers 45 per cent. of its area. Of all volcanoes, Etna is the most remarkable for its number of parasitic cones, “figli dell’Etna,” some of which attain very considerable size. Over two hundred of these have been mapped within a ten-mile radius of the crater. Others place the number at three times as many, but the latter authorities probably include a number of small *bocche*, whence lava or flames are issuing or have once issued. Monte Minardo, near Bronte, is one of the biggest of the minor cones, reaching a height of 750 feet. Others are the twin Monti Rossi, which were thrown up in 1669 during the eruption of Nicolosi. Much of the land then destroyed is now covered by vegetation. Etna’s eruptions are almost always associated with violent earthquakes. When the Monti Rossi were formed 27,000 folk lost their homes or their lives, and in 1693 no fewer than forty towns and 60,000 to 100,000 people perished.

Of course, an active volcano never for long maintains the same altitude, but Etna averages about 11,000 feet in height, and it is the highest

volcano in Europe and the highest mountain in Italy.

Apart from its fascination as a volcano, it has all the charm of a southern mountain. There are three zones of vegetation which one passes through as one leaves the coast for the summit. First of all the "Coltivata" or "Piedmontese," full of corn, mulberries, pistachio nuts, figs and olives, orange and lemon groves, vegetables, and fruit. Somewhat higher up, vineyards are to be found. This area is, indeed, very fertile owing to the richness of the ejected material in plant foods, but it takes some 300 years before this disintegrates and becomes fully mature. Nevertheless, it is claimed that the "Coltivata" is the most densely populated agricultural area in the world.

At about 3700 feet we pass into the second zone, the "Boscosa" or "Nemorosa," which extends to the height of about 7,000 feet. In the lower half of this region the land is clothed with oaks and chestnuts, succeeded, as we ascended, by copper beeches and birches, and finally by great forests of the Laricio pine. Above this wooded area we reach the "Regione Deserta," where vegetation becomes stunted, and very soon disappears altogether. The absence of water and



the frequent shifting of the soil prevent the growth of any alpine flora. Still, there are a few specimens of flowering plants to be found, three of which are peculiar to our mountain. All animal life is here extinct, though in the lower regions wolves, a few wild boars, hares, and rabbits are objects of sport. Etna is clothed with a considerable area of dense forests, especially in the neighbourhood of Linguaglossa, and these forests have suffered during the recent eruption.

On passing through Messina on our return to Naples, we paid a visit to the Russian zoologist, Metchnikoff. At that time he and his wife were living in a flat in a small suburb close to the sea. There was not much room, and Metchnikoff had installed his laboratory in the drawing-room. It was in this year that he made his epoch-making discovery which is here recorded in his own words :

“ Thus it was in Messina that the great event of my scientific life took place. A zoologist until then, I suddenly became a pathologist. I entered into a new road in which my later activity was exerted.”

Metchnikoff had been studying the way in which certain cells of the larvæ of starfish and other

allied marine animals closed round and finally dissolved various larval structures not wanted in the mature parent form, and suddenly a new idea came into his head :

“ One day, when the whole family had gone to a circus to see some extraordinary performing apes, I remained alone with my microscope, observing the life in the mobile cells of a transparent starfish larva, when a new thought suddenly flashed across my brain. It struck me that similar cells might serve in the defence of the organism against intruders. Feeling that there was in this something of surpassing interest, I felt so excited that I began striding up and down the room, and even went to the seashore in order to collect my thoughts.

“ I said to myself that, if my supposition was true, a splinter introduced into the body of a starfish larva, devoid of blood-vessels or of a nervous system, should soon be surrounded by mobile cells, as is to be observed in a man who runs a splinter into his finger. This was no sooner said than done.

“ There was a small garden to our dwelling, in which we had a few days previously organised a ‘ Christmas tree ’ for the children on a little tangerine tree ; I fetched from it a few rose thorns and introduced them at once under the skin of some beautiful starfish larvæ as transparent as water.

“ I was too excited to sleep that night in the

expectation of the result of my experiment, and very early the next morning I ascertained that it had fully succeeded.

“That experiment formed the basis of the phagocyte theory, to the development of which I devoted the next twenty-five years of my life.”

To be present, if not exactly at the birth of so momentous a discovery as Phagocytosis, at any rate very shortly after, was indeed a red-letter day in one's zoological calendar, a day I cannot help recording in this article, although phagocytes have little to do with volcanoes. Metchnikoff's discovery was as important as those of Pasteur and of Lister, and, indeed, it explained much of their hitherto inexplicable researches.

Four years later, in 1887, I climbed another volcano, the Peak of Teneriffe. It was, and had been for some time, dormant. As the Frenchman who arrived at a town overshadowed by an extinct volcano plaintively exclaimed, “They had a volcano and they let it go out!” But at the beginning of the eighteenth century, and again at the end, large quantities of lava poured out from parasitic cones on the eastern side of the Peak. Our ascent was made from Orotava on the northern side of the island. Although one

can ride up on mules, nearly 10,000 feet, to the "Estancia de los Ingleses," where the first part of the night is usually spent, the sudden change from absolute sea-level to such an altitude produced a most profound mountain sickness. However, starting between two and three next morning, one was able to struggle to the top, something over 11,000 feet, and although I am no lover of mountain climbing, it was worth doing to see the wonderful conical shadow of the great mountain—which covers two-thirds of the island—thrown on the waters of the Atlantic. Near the top the ground is very hot. A stick thrust into it will burn; and the whole surface is covered with sulphurous deposits, and sulphurous gases made the mountain sickness distinctly worse.

Volcanoes are not distributed haphazard over the globe, for, as has often been noted, they only occur at the edge of the sea or near extensive inland waters, and although there are active volcanoes in Central Africa, these are mostly in the neighbourhood of the great lakes. Certain extinct volcanoes which are said to exist in Central Asia seem an exception to this statement, but we want to know more about these,

and more about the distribution of the seas in past ages. Many volcanoes are submarine, and they frequently explode : this accounts to some extent for the great quantity of pumice that there is floating on the surface of the ocean, until it gets waterlogged and sinks.

The whole of the Pacific is surrounded by volcanoes : in fact, the boundaries of that ocean are sometimes spoken of as a "ring of fire." "Starting from the north-west end of the island of Sumatra, a line of more or less active volcanoes may be traced through Java, the Moluccas, the Philippine Islands, Formosa, Japan, the Kurile Islands, Kamschatka, the Aleutian Islands, and Alaska." Although there are at present no active volcanoes in Canada or the United States, there is ample evidence that such existed in very recent geological times. In Mexico, Central America, and all along the Andes we pick them up again. Thus the Pacific coast-line is the great volcanic region of the globe. No such state of affairs exists in the Atlantic. Here we only find a small circle of active volcanoes in the West Indies and isolated peaks on some of the scattered islands.

Although there are difficulties, there is still

a great deal of evidence that the explosions are brought about by the access of water to the heated layers of molten rock beneath the crust of our earth. In the words of Sir Leicester Dedlock, speaking on his favourite subject, the Floodgates of Society: "The waters have—a—obliterated the landmarks of the framework of the cohesion by which things are held together." When a volcano is in a state of eruption, it emits a great variety of things, gases, liquids and solids. The molten material from which the igneous rocks are formed is usually termed the magma. This magma may contain a considerable number of elements, and it may solidify in various ways to produce the various granites, syenites, serpentines, basalts, and other rocks which are grouped together as igneous.

Volcanoes also emit gases such as hydrochloric acid, sulphur dioxide, sulphuretted hydrogen, carbon dioxide, and these being chemically active, frequently lead to the deposit of minerals round the opening of the volcano.

Although much has been done in the last two or three hundred years to throw light on the distribution, action and fate of volcanoes, there is still room for much further investigation, but

the number of those men of science who are interested in vulcanology is small. The late Dr. Tempest Anderson, who gave up what time he could spare from a busy professional life to the investigation of these great forces of nature, tells us, at the beginning of his well-known series of photographs of volcanoes :

“ Very few branches of science still remain available for the amateur of limited leisure. . . . I was consequently led to seek some branch of science which gave no prospect of pecuniary return, and I determined on vulcanology, which had the additional advantage of offering exercise in the open air, and in districts often remote and picturesque.”

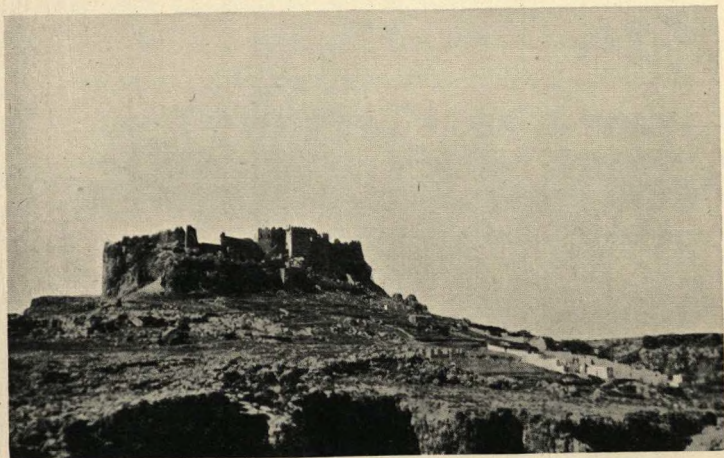
## CHAPTER X

### THE ISLES OF GREECE

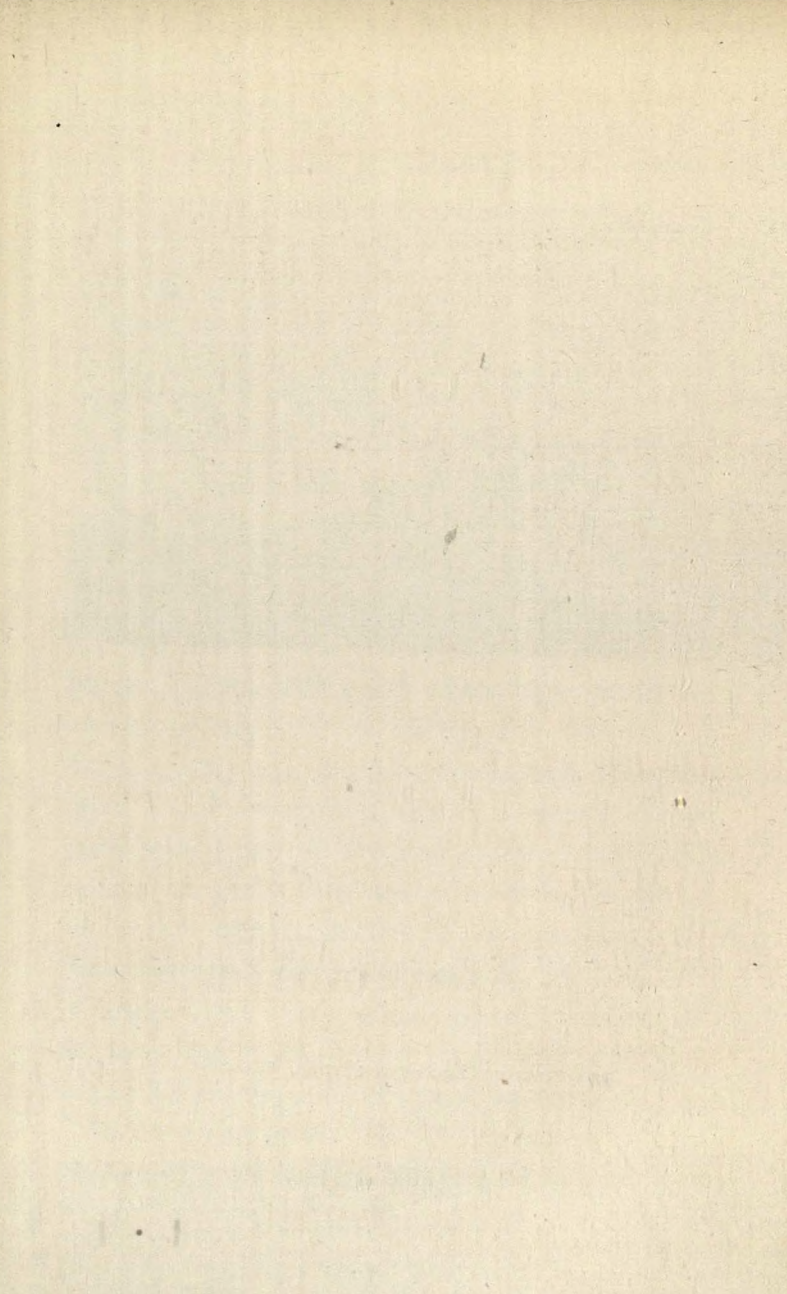
NOTHING can be more delightful, more refreshing, more health-giving than a cruise in a comfortable yacht among "The Isles of Greece." in spring. You are free from steamer routes and the inevitable unpunctuality of all those who go down to the sea in East Mediterranean waters. The yacht goeth where it, or rather its owner, listeth. If, as occasionally happens, a storm arises and the sea becomes, as in Homer's time, "many-sounding," there is almost always some quiet bay or harbour within reasonable reach. A yacht can land you at that point of an island whence a temple or monastery or Frankish castle can most easily be reached. It is independent of the island capital, often situate far from the ruins—for as a rule they are ruins—which form the main object of the visit.

In the spring of the year the Ægean Sea is at its bluest and at its clearest, comparable with, though





THE FORT COMMANDING LINDOS, RHODES



not surpassing, the brilliancy and translucency of the seas of the Bermudas and the Bahamas. The sun is warm, but not too warm, the air crisp and extraordinarily invigorating. It is of an amazing clearness and land can be seen at a distance of some forty miles, whilst the snow-capped mountains are visible some eighty miles off. In the spring, too, the snow is still there and adds a rare beauty to the background.

The trees are breaking into their early foliage. Quinces in flower seem everywhere; the Judas tree adds a splash of vivid colour. The smell of the orange blossom is in the air, and as a foil we have the perpetually evergreen fir, with its clean, resinous odour, the cypress, the bay, the myrtle, and above all the world-worn, world-weary olive. Their sad and mournful mien makes them appear as though they had never got over the moving scene on the Mount of Olives.

The flowers recall the foreground of a Botticelli picture. Asphodel and acanthus give a classical "facies" to the fields where one finds large patches of anemones, the yellow *allium* or garlic, thought to be the "moly" of classical times, and poppies darker than our own. Yellow

and delicate little blue irises mark the moister regions, whilst the gorse and the broom clothe the barren hillsides with a golden glory. Rosemary, wild thyme, and other fragrant herbs are bruised as one moves about the ruins, and bruised they yield up their fragrance.

All these flowers in bloom mean a great activity in the insect-life, and the insects rise to the occasion. Graceful butterflies and heavily laden bees frequent the flowers. Dragon-flies, moths, grasshoppers abound, and beetles more brilliant and iridescent than any jewel crawl about the undergrowth.

The villages in the Greek islands owe a great deal to whitewash. Dwelling-houses of every kind are whitewashed, and even churches and monasteries. This is generally renewed in time for Easter, and we found the whitewashers busily at work at the monasteries in Patmos and elsewhere. Whatever the whitewash conceals, the general effect is pleasing, and one picks out in the clear atmosphere of the Ægean Sea the villages on distant shadowy islands, for, as one gazes from afar, they look like little splashes of chinese-white on a purplish, hazy background.

Coming, as we had come and as many travellers

do, from Southern Italy and Sicily, it was agreeable to find that there were no beggars, or hardly any. In Greece also there were comparatively few Germans. Germans are so much richer than English or French people that they are prepared to pay, and do pay, exorbitant prices in Naples and in Sicily, and thus crowd out the members of other and poorer nations. Italy is overrun with them.

The Greek country-folk are extremely courteous and pleasant to get on with. It is true they talk a great deal amongst themselves, in fact they talk all day; but that doesn't trouble the casual visitor, for only rarely do they talk loudly, and still more rarely does the visitor understand what the talk is about. One is almost sure, even in the remotest towns, to find someone who speaks English, generally a sailor once in our mercantile marine, but equally often someone who has made his little pile in the United States and has returned to spend his old age in his beloved native island, for they have an intense devotion to their "home-town."

There are very few roads in the islands. We mostly passed along uncharted paths or ascended a steep zigzag, a cobbled pathway where, although

it doesn't feel like it, you are really much safer on the back of a donkey than on your own legs. What roads there are in Greece for the most part are found on the mainland and are usually intensely dusty. The dust in and about Athens is almost equal in quantity to that in Johannesburg, but is of a lighter colour. Many of the main roads have been badly damaged by heavy war traffic. The road which used to run straight from the Piræus to the capital is now out of action, and one has to make a detour on the handsome boulevard which has been comparatively recently laid out by a wealthy Greek. The finest road in the country is undoubtedly that leading from the Itea on the north coast of the Gulf of Corinth to Delphi and beyond. This mountain road was built by the British and the French. It is equal to any in Switzerland or in Southern France. During the war the supplies for Salonika were landed at the port of Itea, taken by this road across to Bralo and there placed on the railway running from there to Salonika. In this way a long "danger zone" was avoided and much war material saved.

We came to Athens a day or two after the

last revolution; but we had not missed much. The King and Queen were away in the Balkans, and apparently not a single shot had been fired. A flagpost here or there had been removed, and some trifling alteration had been made in the costume of the Royal Guard. Behind the scenes doubtless there were other changes, but the general public seemed indifferent. Obviously they were bored. They had seen so many revolutions, they had lived through a devastating war—a series of wars. They have had scores of hundreds of thousands of destitute refugees, mostly their own countrymen, but many hundred thousands of Russians fleeing from the Bolshevik “wrath to come,” thrust on their impoverished land, and in this matter and with the help of many British and American organisers they have risen to the task set before them in a truly wonderful way. So few are the Turks living in Greece and its islands that no real reprisal could be made. But the Turks have been expelled from Crete, and as they were the local fishermen it is now very difficult to get any fish to eat in this island.

Every physiologist knows that there is a limit to our sensations. You can go on increasingly

stimulating a sense organ, and the sensation evoked becomes greater and greater—*up to a point*. Pass that point and no increase in the stimulus can produce a further increase in the sensation. It almost seems as though the Athenians had reached that point. Not even a revolution can increase the amount of emotion they are capable of experiencing. They have reached “the saturation point.” Hence the apathetic indifference they showed in what was a political situation of some importance.

But it was otherwise in the country districts. After all there was to be a plebiscite to determine the form of government, and although it was to take place some ten days later than the revolution, the politicians at the capital were pretty confident how it would turn out, and the politicians were right. “Il y a avec le scrutin des accommodements.” In an incredibly short time after the voting began it was announced that between 80 and 90 per cent. of the votes cast were for the Republicans. But whole districts in the Peloponnesus were Royalist. In the plain of Argos, motoring to Tiryns and Mycenæ from Nauplia, every house and shop bore the word *ὄχι*, which is apparently the shortest way of saying



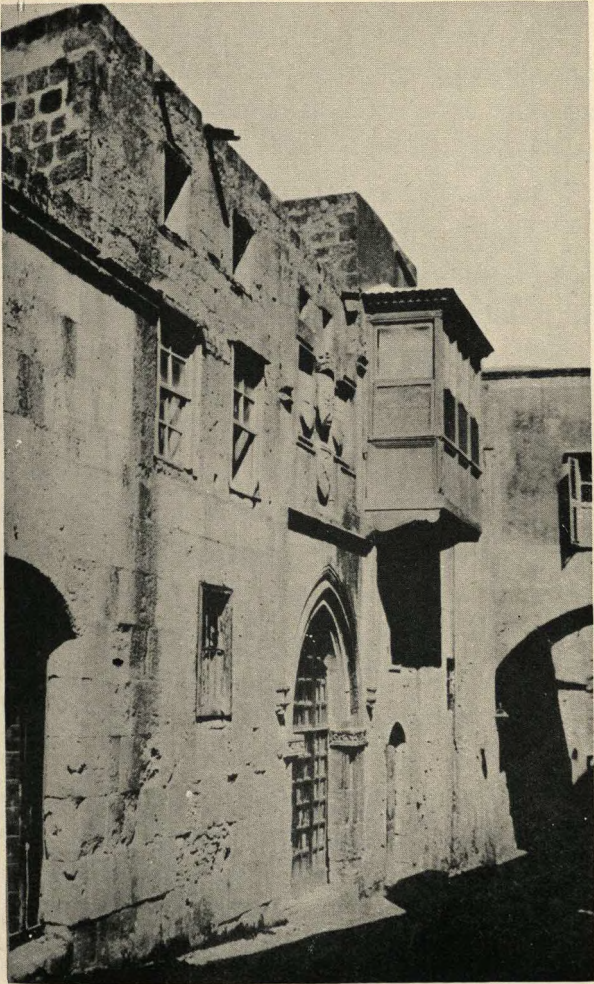
“No! We want no Republic to-day.” All the children and youths shouted *ὄχι*, as we passed. The horses and carts showed the King’s colours, a light yellow just the colour of the broom in Greece, the *planta genista*. ΖΗΤΩ Ο ΒΑΣΙΛΕΥΣ was everywhere placarded, and the enthusiasm for Royalty was certainly genuine.

## CHAPTER XI

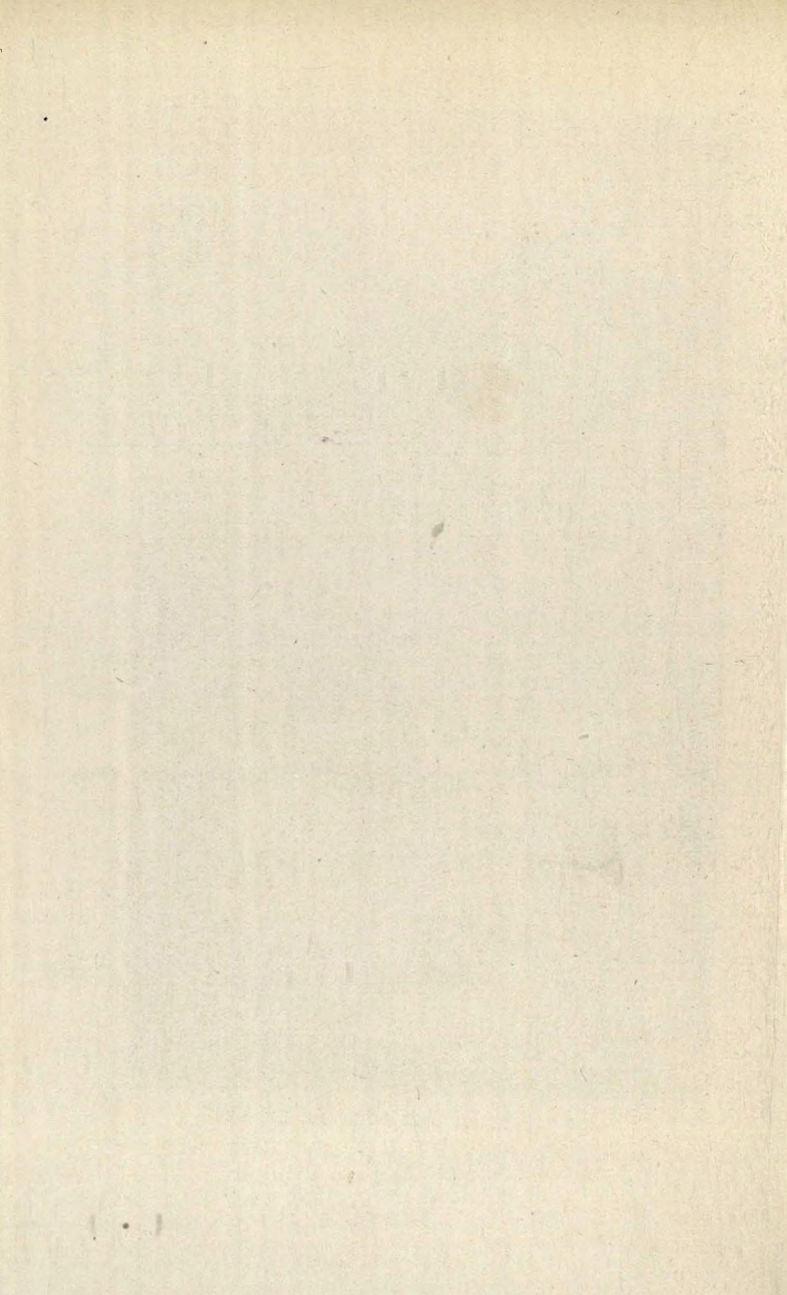
### THE DODECANESE

THE elections were also in evidence in the islands. At Paros, where the marble comes from, we landed to see the Church of the Hundred Gates, and here we were met by the Pappas and also by the Parian Deputy, a distinguished looking General who had come down to organise the local voting and most courteously interrupted his electoral activities to be as nice as possible to us all. The church they showed us over has an unusually rich ikonostasis with the usual three doors. Only the King and the clergy may use the central portal, and now there is no King! We also saw here a strange font shaped like a huge hollow cross. In this total immersion is indeed possible, but, as the rubric of our Baptismal Service enjoins, it would have to be done "discreetly and warily."

Before the Balkan wars the total number of Greeks was estimated as a little over eight million



THE STREET OF THE KNIGHTS, RHODES



souls. Of these nearly one-half (3,500,000) were living in what was then European Turkey. Nearly one-quarter (2,000,000) of the total also lived under Turkish rule in Asia Minor, whilst about one-twentieth (400,000) lived in islands which were officially, though some only nominally, under the government of the Sublime Porte. The remainder, and it was not a very large remainder, lived in Greece proper.

Under the old Turks the rule was not so oppressive as it became under their younger successors. In the large island of Samos, for instance, the inhabitants had a Constitution of their own and managed their own affairs. For more than a century they had flown their own flag; two horizontal bars, red above and the Greek blue, bearing a cross, below. It is true that the Governor, termed the Prince of Samos, was appointed by the Turkish Government, but he was bound to be a Christian, and unlike the ordinary Turkish Governors he could not be removed at the pleasure of the authorities which control the Ottoman Empire. A small, a very small, Turkish garrison lived on the island, and a very large percentage of the annual tribute paid by the Samians was spent in local

improvements on the islands. Though, from a Greek standpoint, the position may not have been ideal, the inhabitants seemed prosperous and were said to be contented.

Although Strabo wrote slightly of the local wine of Samos, its manufacture has evidently greatly improved as the centuries passed. Byron selects it among all the Island wines :—

“ Fill high the bowl with Samian wine,”

and Tozer was “ regaled ” at the capital, Vathy, with old wine “ of a splendid quality,” “ almost a liqueur.” Like other Greek wines, it is very strong and demands dilution with a considerable amount of water. It is exported in large quantities to North German ports and other places where wines are “ doctored.”

The story of the Dodecanese, or Southern Sporades, is a tangled tale. To begin with, the number of these islands is not twelve, but thirteen—Rhodes, Kos, Kalymnos, Leros, Nisyros, Telos, Syme, Chalke, Astypalaia, Kasos, Patmos, Lipsos and Karpathos. Their past history is a varied one. The conspicuous remains of the Knights of St. John and of various Venetian and Italian occupations testify to a chequered

career. Since the sixteenth century, however, they have been Turkish, but the Turkish rule was not oppressive. On the payment of a very moderate tribute the inhabitants were afforded complete liberty "from all points of view," and although a Turkish Governor and a Turkish Judge resided at Rhodes, and another Turkish Judge lived at Cos, the islanders really managed their own affairs until the year 1908. Then the Young Turks, so much less tolerant and so much more chauvinistic than the "older" variety, did away with all the privileges hitherto granted, established conscription, enforced recruiting for the Turkish army, and made Turkish the official language.

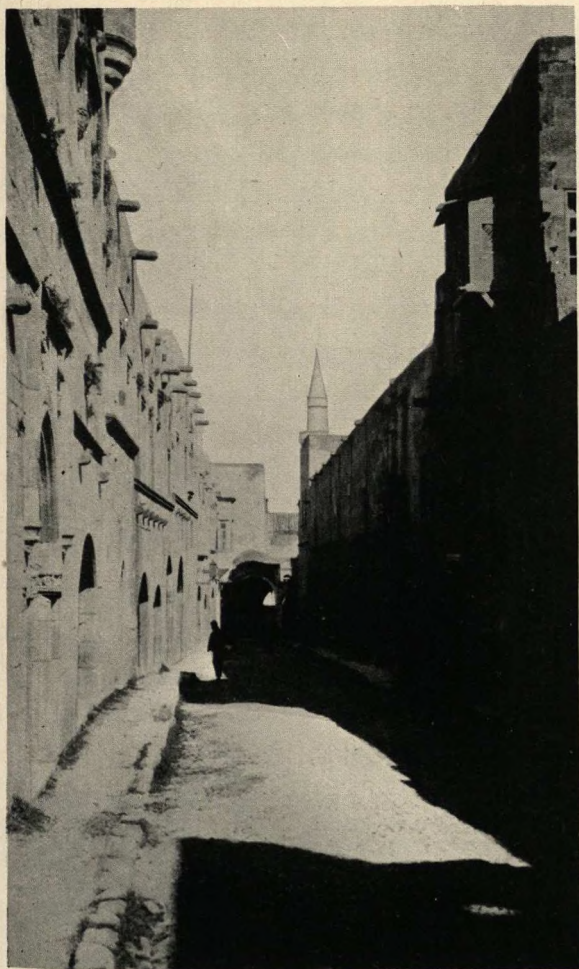
The islanders groaned under these new and harsh exactions which were to come into full force in 1912. By this time, however, the Italians, having beaten the Turks in Libya, had annexed the Dodecanese islands as part of the spoils of war. At first the islanders welcomed the new governors as liberators, but during the first Balkan war their presence was unfortunate for the Greeks. Had they not been there the Hellenic fleet would undoubtedly have taken the Dodecanese, as they took the other Turkish islands.

In spite of the fact that both British and Italian statesmen have declared that the islands "might still be free," the Treaty of London in 1915 gave Italy the "entire sovereignty" over them. Later, in 1919, the Venizelos-Tittoni Agreement ceded twelve of the thirteen islands to Greece. Count Carlo Sforza's Government, however, denounced this Agreement and to-day the islands are still under Italian rule.

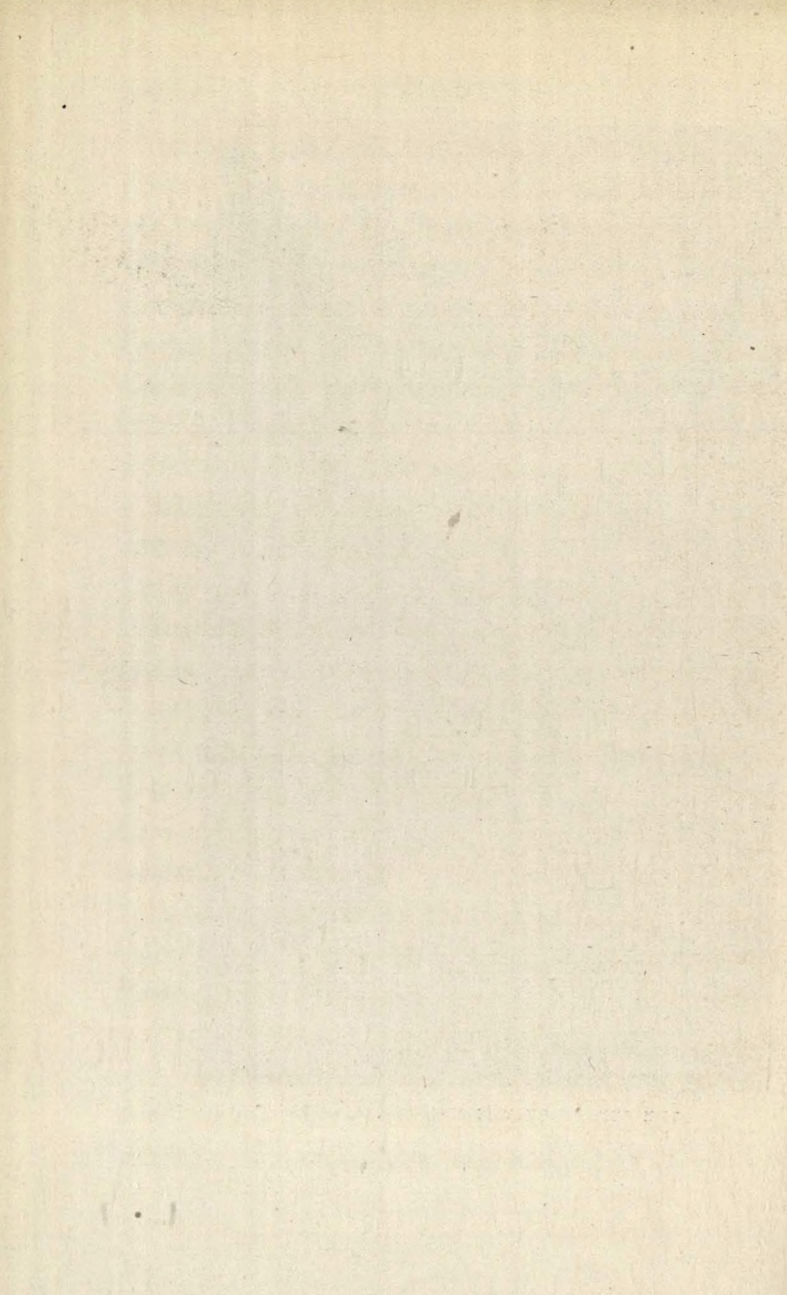
The inhabitants of the Dodecanese are almost entirely Greek. In his *History of the Greek People* Dr. Miller states that out of a total of 118,837 islanders 102,727 are Greek; the remainder, chiefly Turks and Jews, live only in two or three islands, mainly in Rhodes. The islands are on the whole poor, but many of the men having been sailors in our mercantile marine have saved a little, and others have made a moderate fortune in the United States. All, as I have said, are passionately devoted to their native isle, and many return to their native village, there to spend the evening of their life.

The chief trade of the islands is in sponges, and the conscription proposed by the Turks would have taken away all the young men—and it is only young men who can gather sponges.





THE STREET OF THE KNIGHTS, RHODES



The Greeks at present complain that both the Turks potentially and the Italians actively have almost destroyed the trade. I do not for a moment pretend to understand the present commercial outlook of the sponge industry. For all I know it may resemble the leather trade, about which Joseph Finsbury tells us, "There is nothing in the whole field of commerce more surprising than the fluctuations of the leather market. Its sensitiveness may be described as morbid." Possibly the competition is much more serious than it used to be. The appointment of an expert from the Marine Biological Laboratory at Plymouth to organise the sponge industry in the Bahamas may have had an effect on the market. At any rate, the sponge merchants from the Bahamas did a great trade in their section of the British Empire Exhibition at Wembley. Whatever be the cause, Turkish, Italian, or competition, the sponge trade in the Dodecanese seems to be under a cloud.

The first Dodecanese island we visited was Rhodes, and to visit Rhodes is not always easy. The harbours are silted up, and when a sea is running the shore boats cannot reach the steamer. Tozer tells the story of a gentleman who left

Smyrna to spend Christmas at Rhodes, and being unable to land was carried on to Alexandria; returning on the same boat he was again unable to land. In fact, he spent weeks and weeks travelling up and down the Eastern Mediterranean without ever being able to land on the island. In the end, however, he did spend Easter on Rhodes.

We were luckier and were able to land both at the south end of the island at Lindos, and later at the city of Rhodes, the capital of the island, which lies farther north.

Lindos is a clean-looking little town lying athwart two small harbours. We were met by an Italian sergeant and a soldier or two, who, without being in any way obtrusive, kept a paternal eye on all our doings. The Knights of St. John, or, as they call them out there, the Cavaliers, have left many mediæval marks on the windows and doorways of the town. The striking feature of Lindos is the Castle of the Knights, which towers over the town some hundred feet up, Just the sort of place for—

“ Sir Guy—the doughty Crusader,  
A muscular knight,  
Ever ready to fight,  
A very determined invader.”

These castles and those of the Venetians are never whitewashed, and are for the most part in ruins, but at Nauplia on an island called Bourzi in the harbour one is kept in fair repair, for it houses or did house the public executioner, who is always a kind of converted convict and is very unpopular, so he is or was carefully guarded. Once a year he used to be taken round the country in a man-of-war to chop people's heads off, but now that capital punishment has been abolished no one seems to know what he does or even if he still lives in his castle.

Rhodes, the capital, was the busiest town we viewed in the islands. We were there on a Sunday, and the Turks and the Jews were doing a great trade in the chief street, where shops of all kinds jostle each other. Shops selling the same wares are contiguous, an Eastern and a very practical arrangement. In a parallel and quite deserted street still stand the priories of those nations which provided the Knights. Magnificent remains, but difficult to see because of the narrowness of the thoroughfare and the accretion of the inevitable latticed Turkish balconies.

All the old Rhodian plates seem to have

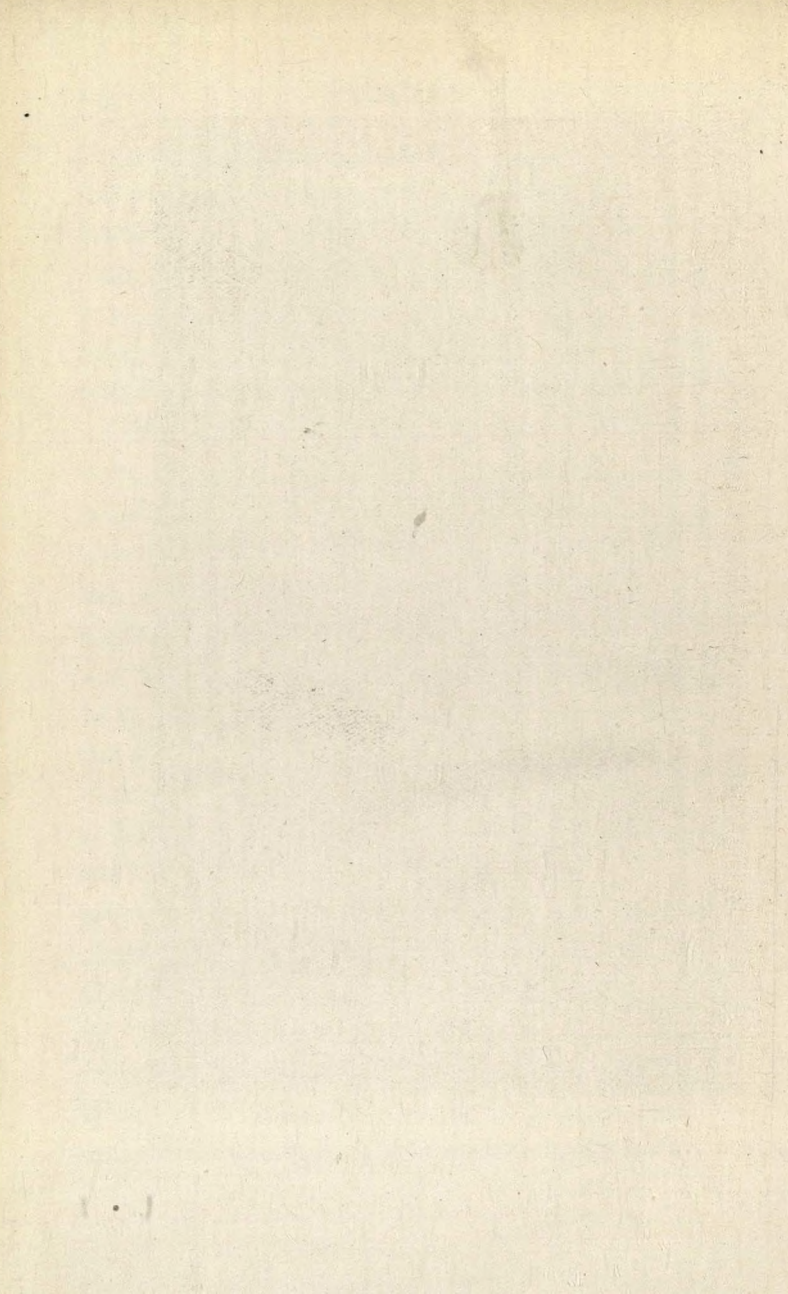
disappeared, though the people of the island still decorate their walls with plaques. The old Rhodian ware was used for no other purpose than decoration, and each piece is pierced by two holes for the suspending string. Tozer tells us that dishes from Kameiros, made about 700 B.C., were pierced in the same way.

The small island of Cos was visited to see what is left—and it is not much—of the temple of Æsculapius and the venerable and gigantic plane under whose shade it pleased us to think, as the pious islanders think, that the greatest of all physicians, Hippocrates, taught. It was at Cos that we first heard a “muezzin” call the faithful to prayer, and this he did not from a minaret but from the top of a staircase leading to a classic doorway.

Later in the day we steamed over to the mainland to have a look at Budrum, for the Turkish town of Budrum stands on the site of Halicarnassus, where the Mausoleum was. We did not land. Apparently we were not yet on speaking terms with the Turk. Through the kindly offices of the Swedish Legation my passport had been viséd for Turkey, but when it came back a letter from the British Authorities came with it.



THE STREET OF THE KNIGHTS, RHODES





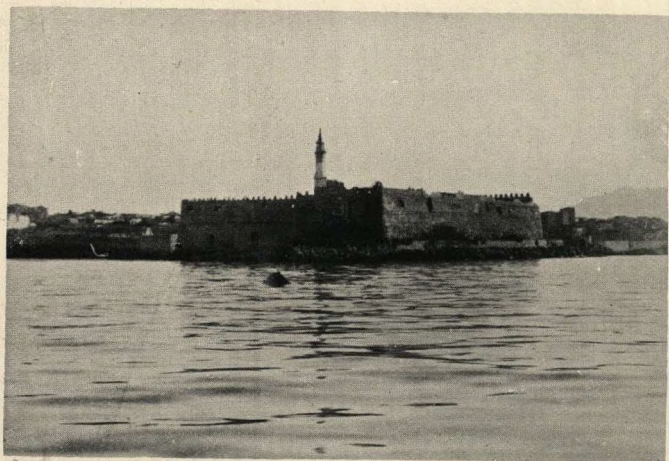
This told me in no uncertain terms that if I went to Turkey I did so entirely on my own responsibility, and that if I got into that country his Britannic Majesty's Government would not in any way help to get me out. So I gave up the *Civis Romanus sum* feeling and stayed on board and looked at the birthplace of Herodotus from the sea.

## CHAPTER XII

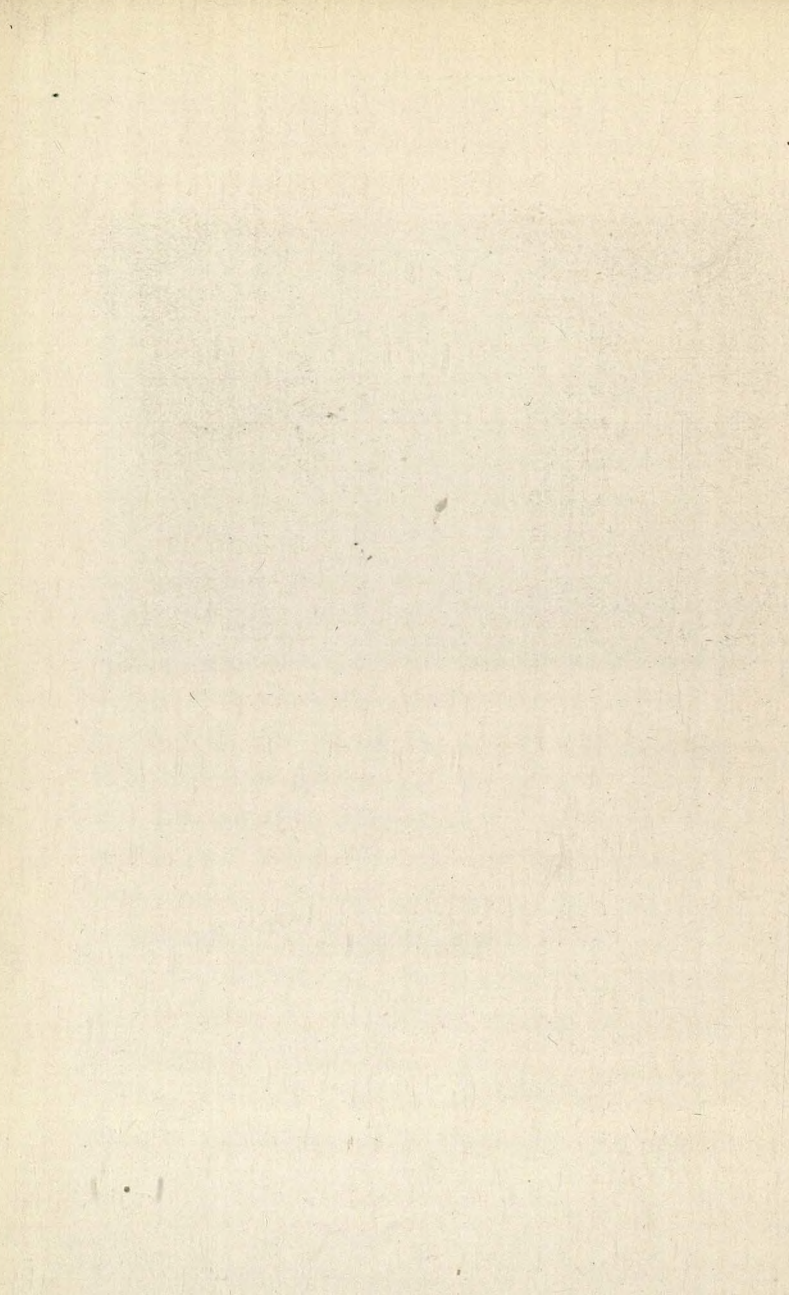
### CRETE, PATMOS, AND SANTORINI

THE landing at Crete is not always easy, as the port of Candia is an open roadstead. However, one can do much more with a motor-boat than one can with a native rowing-boat, and we landed quite comfortably. The Museum at Candia is well arranged and full of the most fascinating objects from Knossos—double-headed axes, bulls' heads with golden horns, models and pictures of ladies whose gowns recall the pictures of Keene and Du Maurier, slim-waisted youths who can hardly have existed—where did they put their food?—all admirably displayed, labelled, and catalogued. To Knossos we motored out in about half an hour on a fairly good road, and we were immensely impressed by all that Sir Arthur Evans kindly showed us.

I rather wish St. Paul had not given his endorsement to the saying of Epimenides, who seems



THE FORT AT CANDIA



to have been a poet, priest and prophet at Knossos, that "Cretans are always liars." As far as I can make out, there was a special temporary reason for this remark of Epimenides. Burke did "not know the method of drawing up an indictment against a whole people"; apparently Epimenides did. To take the outburst of this local prophet and hand it on for all time seems to me to take a heavy responsibility. A man in the position of the Apostle should have thought twice before confirming such a wide generalisation. It has prejudiced the island just as the statement of Phocylides about the badness of the people of Leros has injured Leros. We certainly did not find that the Cretans lied more than any other people we came across.

But St. Paul went further. Not content with attacking their veracity, he censured their voracity. He called them "*γαστέρες ἀργαί*," which is cryptically interpreted by the Authorised Version as "slow bellies," and crudely by the Revised Version as "idle gluttons." We saw no evidence of this. The Cretans, like the other Greek islanders, are thrifty and abstemious. They support life chiefly on bread and olives, a few vegetables, a very few eggs and fish and

occasionally a bit of cheese, "just to fill in the chinks," as Mr. Jorrocks used to say.

During the war large deposits of coal, thrown over from the various warships which were centred there, accumulated at the bottom of the sea; but not being mechanically minded, and being devoid of dredging apparatus, the Cretans retrieved this treasure by attaching an octopus to a string and lowering the mollusc over the coal-dump. As soon as it had attached itself by its tentacles to its resting-place, they gently pulled it up; the adhering lump of coal was then detached, and the octopus dropped in again. As in Southern Italy, the octopus is used as an article of food, but this is the first instance I have come across of this mollusc being of practical value as a coal-heaver.

It has indeed been served as an article of food from very ancient times, and, as Professor J. A. Stuart has pointed out, Plutarch in *De Audiendis Poetis*, ch. i., states that "both the polypus or octopus and poetry are delicious food, but must be partaken of with moderation, for they are both apt to cause bad dreams."

Octopuses are commonly eaten around the Mediterranean and in Japan, and probably in

all parts of the world where the warmer seas enable them to flourish. There are fifty-four distinct species of this mollusc found in the Mediterranean area, and some are more frequently eaten than others, probably on account of their superior flavour or tenderness. The parts generally consumed are the tentacles and that flap or mantle which conceals the respiratory organs. These are almost pure muscle, and untreated are decidedly tough. My first recollections of Greece are associated with seeing the old patriarchs of the village sit round near the seashore, smashing down an octopus upon the stones, picking it up again and smashing it down once more. This process was to render the octopus "more tenderer," to use a phrase of Mr. Tony Weller.

I append a list of those which are preferred by the epicure, with the Neapolitan name in brackets. They are arranged in order of culinary merit :

*Loligo vulgaris* (Calamaro verace).

*Octopus vulgaris* (Purpe verace).

*Sepia officinalis* (Seccia).

*Todarodes sagittatus* (Totero).

*Eledone aldrovandi* (Purpe asenische).

*Illex coindetii* (Tutariello).

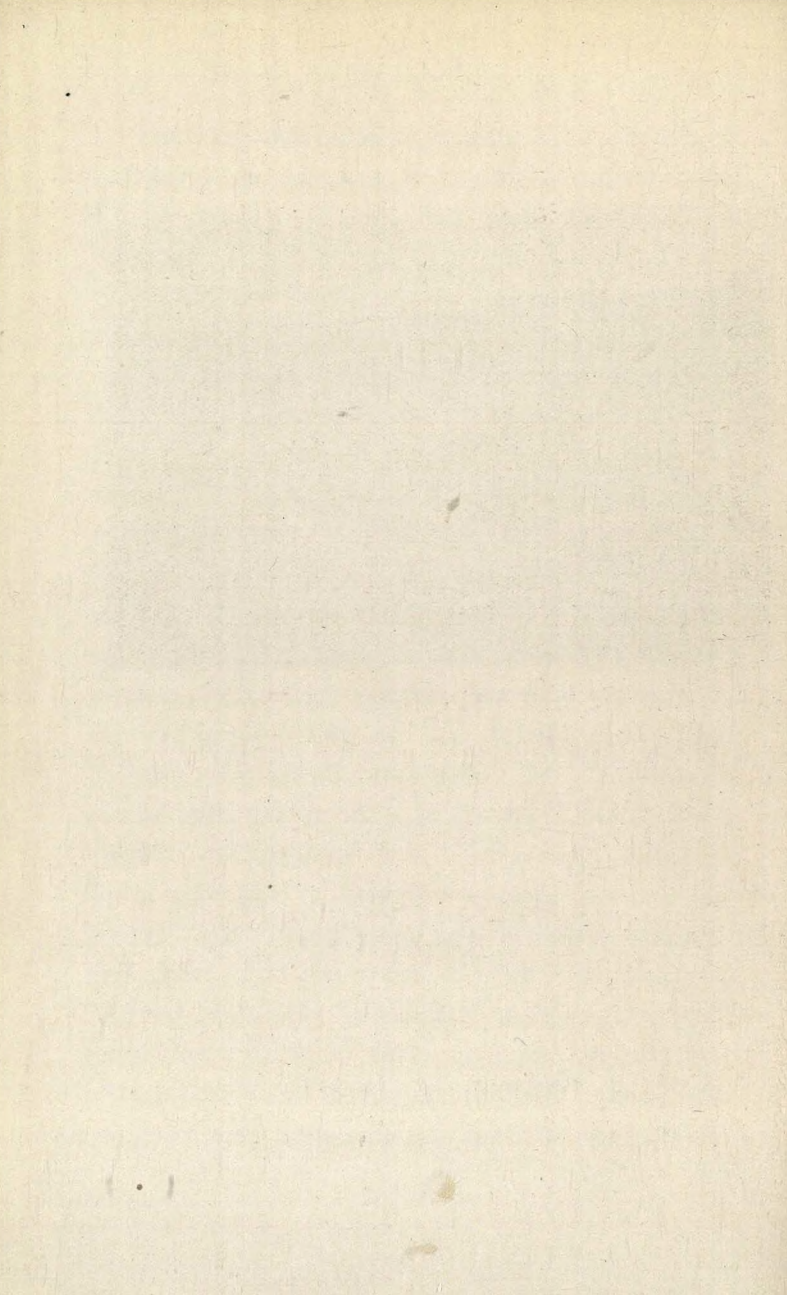
They are also commonly eaten in Spain, where *calamares en su tinta* is a very favoured dish. Quite recently I have had them for lunch in Lisbon.

Sometimes the tentacles are eaten dried, in which case they are generally found, at any rate by foreigners, tough and unattractive. But still, they come in very handily during Lent, when both meat and fish are forbidden. In Japan, where they also form a favourite article of food known as *tako*, they are frequently served as fritters known as *tempura*, in connection with which a former British chaplain at Yokohama states that these molluscs are apt to make inland raids on the potato patches, for they are said to be extremely fond of this tuber. Like Dr. Johnson, in his anxiety about the "existences of the spiritual world," we should "like to have more" evidence of this. It is very difficult for a zoologist to imagine a cuttle-fish out of water. One doesn't see how it could breathe, and those that creep out of their tanks in the Marine Biological Laboratory at Plymouth very soon die. Further, their curious, underhung, parrot-like beak and their toothed tongue do not seem very well adapted to tackle the tubers.





THE PALACE AT KNOSSUS



Still, very strange things happen in Japan, and one would be loth to under-estimate the varied activities of such a creature as an octopus. The Chinese dry these molluscs and export them as they do the sea-slug or trepang. They make the dried bodies into soup.

Until recently the cuttle-bone, which is occasionally seen wedged between the bars of canary bird-cages, was used in the manufacture of pounce, which almost obsolete material leapt into prominence owing to the fact that the Archbishop of York used it in the consecration of the new Liverpool Cathedral. The pounce-box, which has been superseded by blotting-paper, is still found as a pendant to the inkpot in many a Georgian inkstand. It is still used for diminishing the greasiness of parchment, which makes that material so reluctant to receive ink from the modern pen. The best quality consisted of a very finely-ground cuttle-bone mixed with gum-sandarach. Gum-sandarach is a gum gathered from a species of cypress (*Callitris quadrivalvis*, Vent.) which is common enough in North Africa. The pounce is sifted over the wet writing and shaken off when the ink has dried. The common method—and cheaper method of course—was to

use the finest sand, and this I have seen recently used in wayside stations on Italian railroads. In South Africa and elsewhere the cuttle-bone when very finely ground is used as tooth-powder. The cuttle-bone is also used as a moulding material for the finer form of castings of various precious metals.

Another commercial product of the cuttle-fish is derived from the ink gland. The octopus has a curious method of escaping from its enemies. It ejects a black and somewhat sticky fluid, and there is an old saying that it escapes in a flood of ink like a facile controversialist. This dark brown or blackish fluid is secreted by a special gland which opens into a reservoir, and it is by the contraction of the walls of the reservoir that the fluid is forced out. It not only hides the mollusc from its enemies, but it entangles and impedes the movements of the latter by its slight viscosity. The pigment sepia is obtained as follows: the ink sac and gland are removed from the animal the moment it is captured, and are speedily dried to prevent any decay. The contents are then finely powdered and dissolved in caustic alkali and finally precipitated from the solution by neutralising it with acid. After



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A TYPICAL "SCALA" OR ISLAND PORT

THE UNIVERSITY OF CHICAGO

washing with water the precipitate is ready to be made up into little blocks or cakes.

But octopuses are harmful as well as useful. They attack fish—especially when in shoals—and at times have been known to interfere most seriously with the fishing industry around our coasts.

In many of the islands we were offered coins. I, with the fear of the Fitzwilliam Museum behind me, did not buy any. The last time I was in Greece the late Professor J. H. Middleton told us that if one was offered a really good coin it would be well to inquire whether the seller kept turkeys. It appears that a sojourn in the gizzard of that fowl produces just the right patina, or polish, which deceives the expert. Of course one has to sacrifice a turkey, but this is a small matter to the coiners, who demand and get hundreds of pounds for golden coins—and, after all, they can eat a great deal of the turkey.

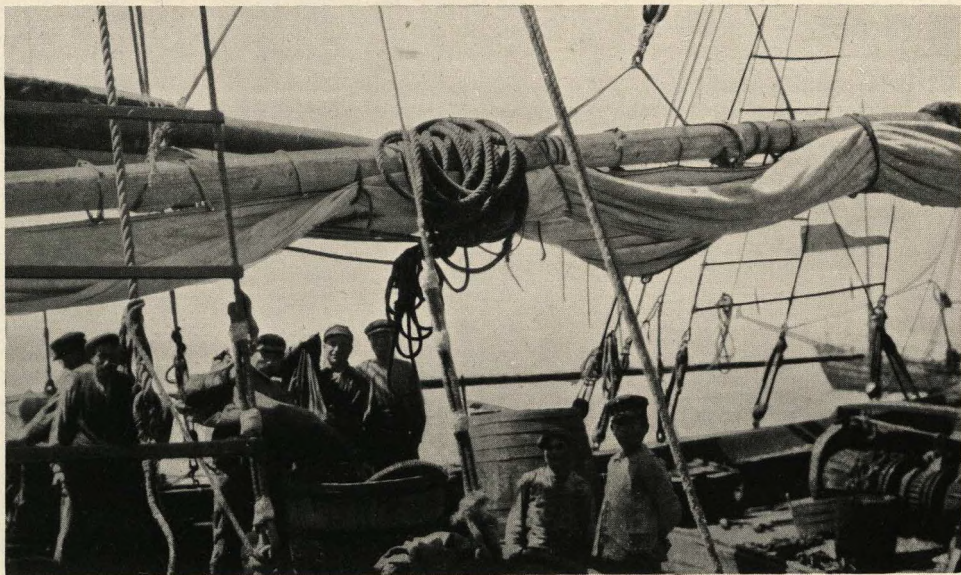
The last of the Dodecanese we visited was Patmos.

On landing at the Scala we were received by a very courteous and aristocratic-looking young Italian officer, who, with his sergeant-major,

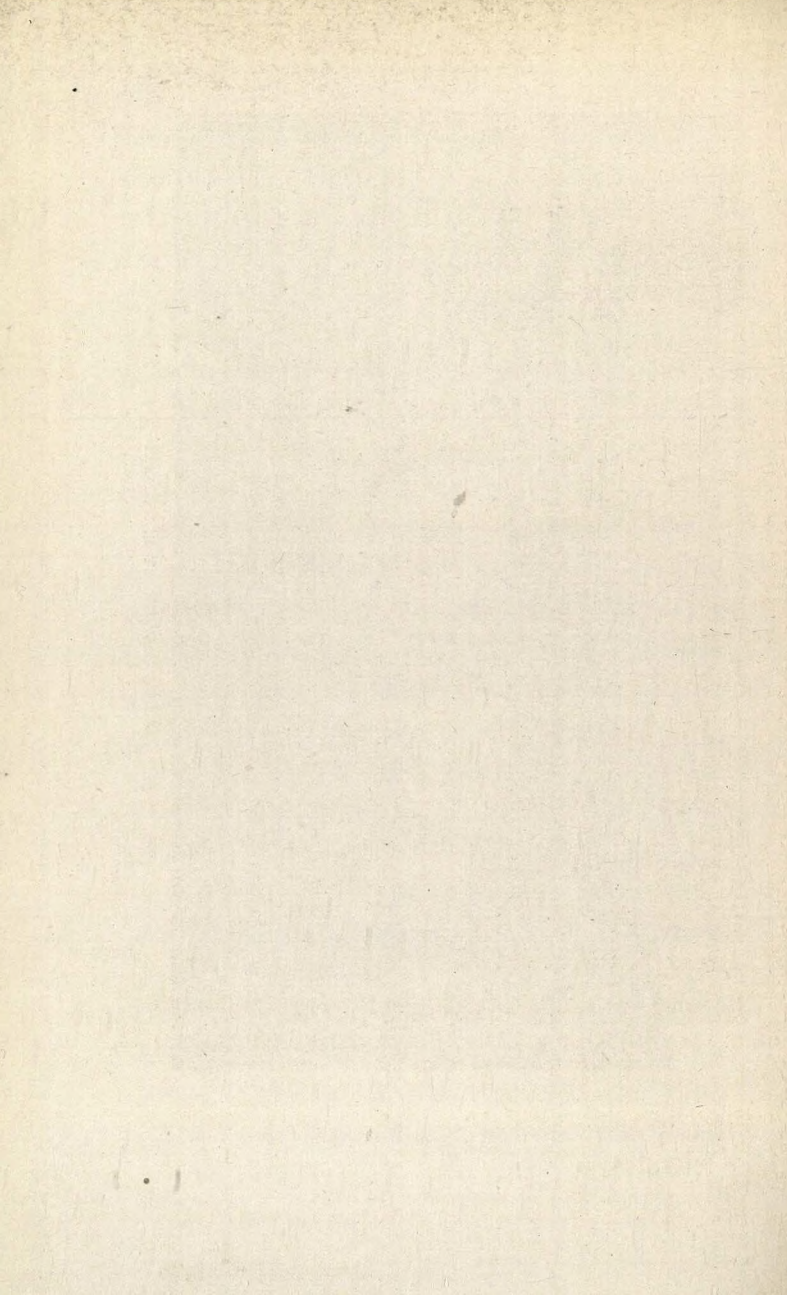
accompanied us on our visit to the monasteries. His whole garrison consisted of only eleven soldiers, who controlled the whole population of Patmos. It is quite possible he took us all for Americans, for when we got back to Athens we heard at the Legation of some Englishmen who were refused permission to land on the island and had to knock about throughout the night in an open boat in the unsheltered harbour.

From the harbour we climbed up a long ascent to the Monastery of St. John, and were most courteously treated by the abbot and monks. They have still retained a splendid collection of sacred vessels and many documents of the greatest value. The church alone was worth the climb, for it has a wonderful decorated ikonostasis. The building was the queerest jumble of rooms and staircases and tiny courts, all apparently at different levels, but ultimately we got into the library and saw the precious manuscript in uncial letters of gold and silver on purple vellum. The colour of the leaves was the nearest approach to the old imperial purple that I remember seeing. The art of preparing this from the sea-snail (*Murex*) has been lost, but they are at present





LOADING WINE AT SANTORINI



making vigorous efforts to recover the mystery in the United States. Thirty-three leaves of this Codex are at Patmos and some of the others are scattered in Rome, London and Vienna. But there are many other valuable treasures, not the least among which were some wonderful bindings. The monks also showed us some curious wooden boards which they bang with a wooden mallet, instead of ringing a bell, to summon the community to prayer or to feasting. The most beautiful thing we saw in the Monastery of St. John was the inscription over the door of their ancient library: *ψυχῆς ἰατροεῖον*. Indeed, this was one of the most delightful things I saw during all our tour in Greece.

I never could make out what the monks in Greece did. Apparently they resembled our House of Peers who, during the Napoleonic wars,

“ Did nothing in particular,  
And did it very well.”

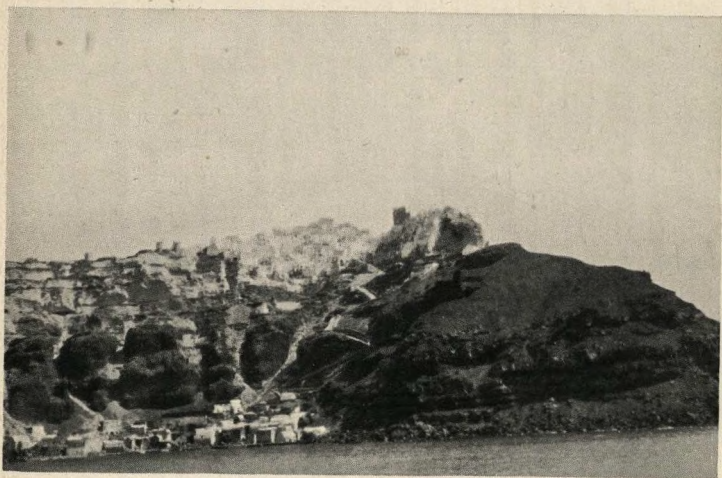
They do not seem to take any part in preaching or any charitable care of the sick or poor. They appear to lead a quiet, contemplative life, though what they contemplate is not very clear. When they are not contemplating they carry on

certain domestic tasks, and, as a rule, they make their own clothes, prepare their own food, and distil their own liqueurs ; and in certain monasteries the monks cultivate their garden. In other monasteries they employ lay brothers for all outside work. At any rate, these monkish gentlemen were not very learned, at least in modern matters. Of all the monks we met there was but one who could talk anything but his native language. Looking at the books and seeing how many of them were tattered, riddled with book-worm, and with broken backs, I could not help reflecting that it would not be a bad thing if one or two of the monks were trained as book-binders. At any rate, they were proud of their books and pleased to show them. After being restored by a white, cream-cheese-looking sweet-meat, which tasted like marsh-mallows, and a small glass of cognac, we visited the other monastery on the way down, that of the Apocalypse. Here, after descending some considerable number of steps, we discovered the cave where St. John wrote his Revelation :

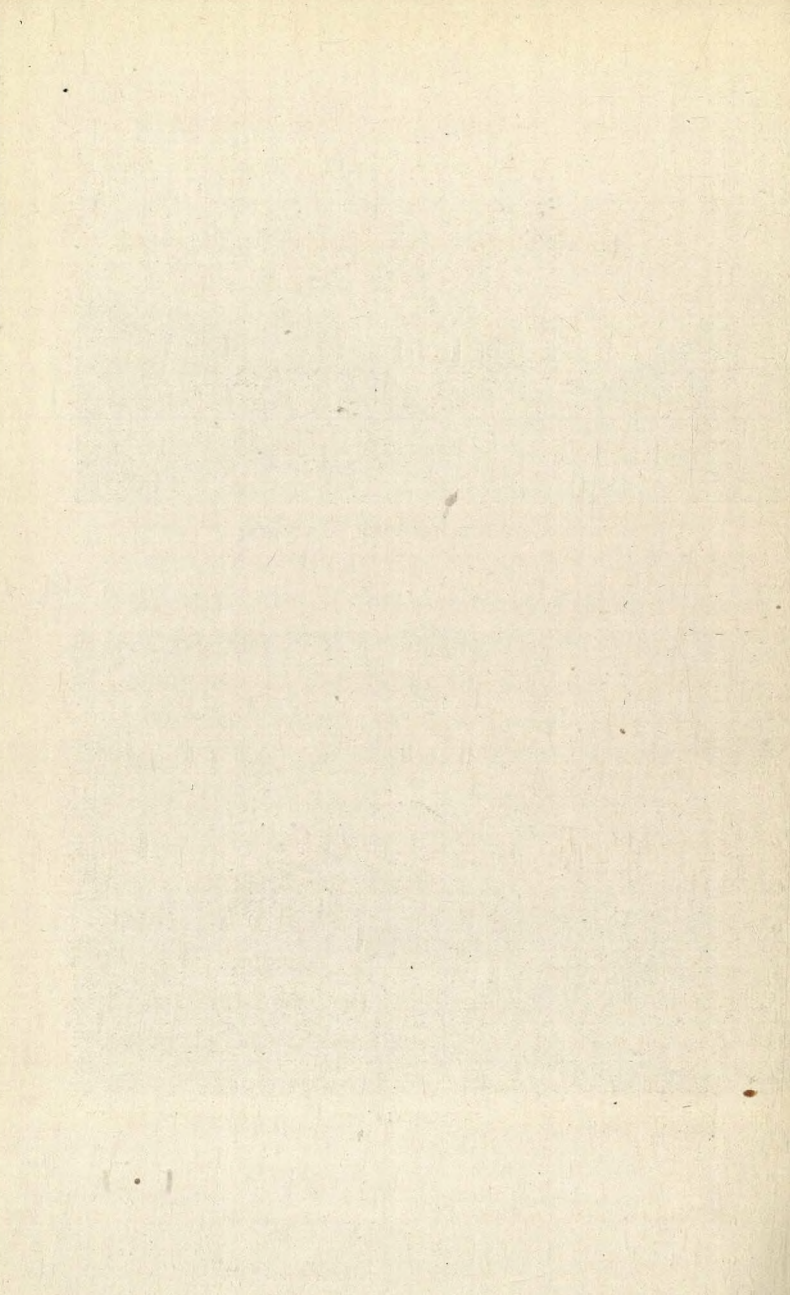
“ I, John, your brother . . . was in the isle that is called Patmos.”



ENTRANCE TO THE HARBOUR, SANTORINI



SANTORINI



After seeing the cave, the guests were treated by the hospitable monks to quince jam and liqueurs.

The number of monasteries is declining. Under Capodistria, nearly a century ago, 300 were done away with, and twenty-five years ago there were only some 2500 monks and less than 500 nuns in the kingdom; the latter enjoy greater liberty than their sisters in the Roman Church.

Altogether, there are some 4000 to 5000 inhabitants of Patmos, who are practically all Greeks and Orthodox, there being very few Jews or Turks. These thousands are controlled by so small a number as a dozen Italian soldiers. I asked one of the privates how they managed to do it, and he replied that the inhabitants "hanno paura," so I suppose the island is now ruled by moral suasion.

But if I could have my choice of all the Greek islands we visited I should certainly choose Santorini (Thera). It is the queerest possible island, but it has an extraordinary fascination. It is the most southern of the Cyclades, and it was thence we started for Crete. Santorini—called after St. Irene, who was murdered there

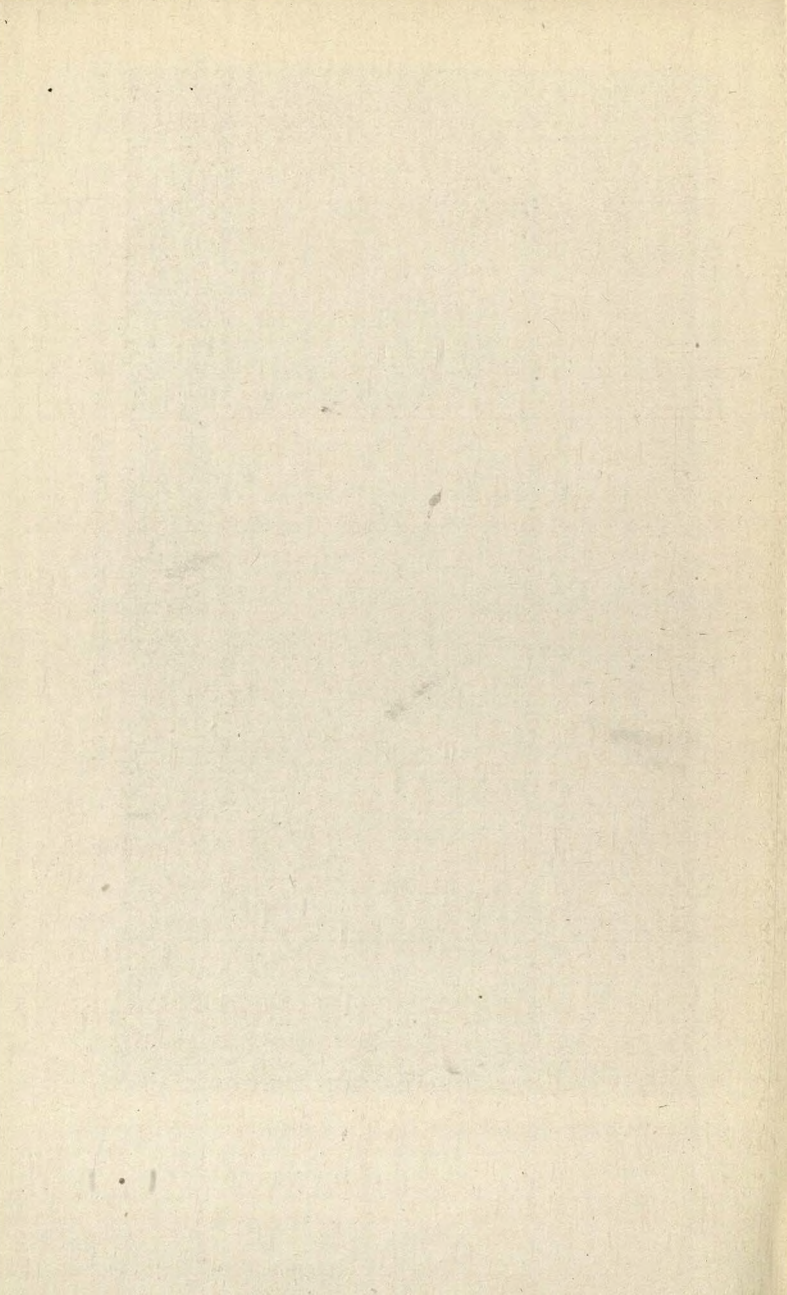
early in the fourth century, and sometimes known as Thera—is, in fact, the crater of a huge volcano. The edge of this crater is broken down in two places, thus making two inlets, one to the north and one to the south, and it has a few scattered small islands in its centre. The crater is extraordinarily deep and there is no anchorage except at one comparatively confined spot. In places the water is as warm as a hot bath and pumice-stones were floating about on it. It is so impregnated with sulphur and other products of volcanic action that ships with foul bottoms repair thither. The sulphur has a fatal effect upon the barnacles, seaweed, and other encrusting organisms which do so much to diminish the speed of a sea-going vessel, and the ships leave these waters as clean as if they had been dry-docked. This particular part of the enclosed water basin is quite yellow and bubbling with gases very much as the waters of certain bathing resorts bubble with their gases.

The wild, even horrible, aspect of the volcanic rocks has a fascination for me, and the white capital, perched on the edge of the volcano towards the northern limit, and the wonderful zigzag path cobbled with blocks of lava which





THE PLANE TREE OF ÆSCULAPIUS, COS



led from it to the harbour formed a very appealing and human sight. Of all the islands we visited Santorini seemed to have the busiest people. Up and down the zigzag path the little donkeys were constantly passing, laden with goatskins full of the *vino santo* which used to be exported in large quantities to Russia and now goes elsewhere, or with bags containing a certain cement which is resistant to sea-water and is hence in great demand for building ports and waterways. For instance, it has been very extensively used in the port of Alexandria and in the Suez Canal.

There is a feeling of life and bustle about the place and people which appeals strongly to one's sense of the picturesque. And in Santorini less than anywhere else were we bothered by crowds of people watching all our doings. They were very courteous, very polite, very good-looking, and one handsome young sailor from Cos was extremely anxious to be photographed; but, on the whole, they were very unobtrusive. As everywhere else, the volcanic soil is highly fertile, and although there are no trees, vines and other crops flourish as they do on the slopes of Etna. There is something antiseptic in the soil, so that dead bodies remain unchanged, and this has given

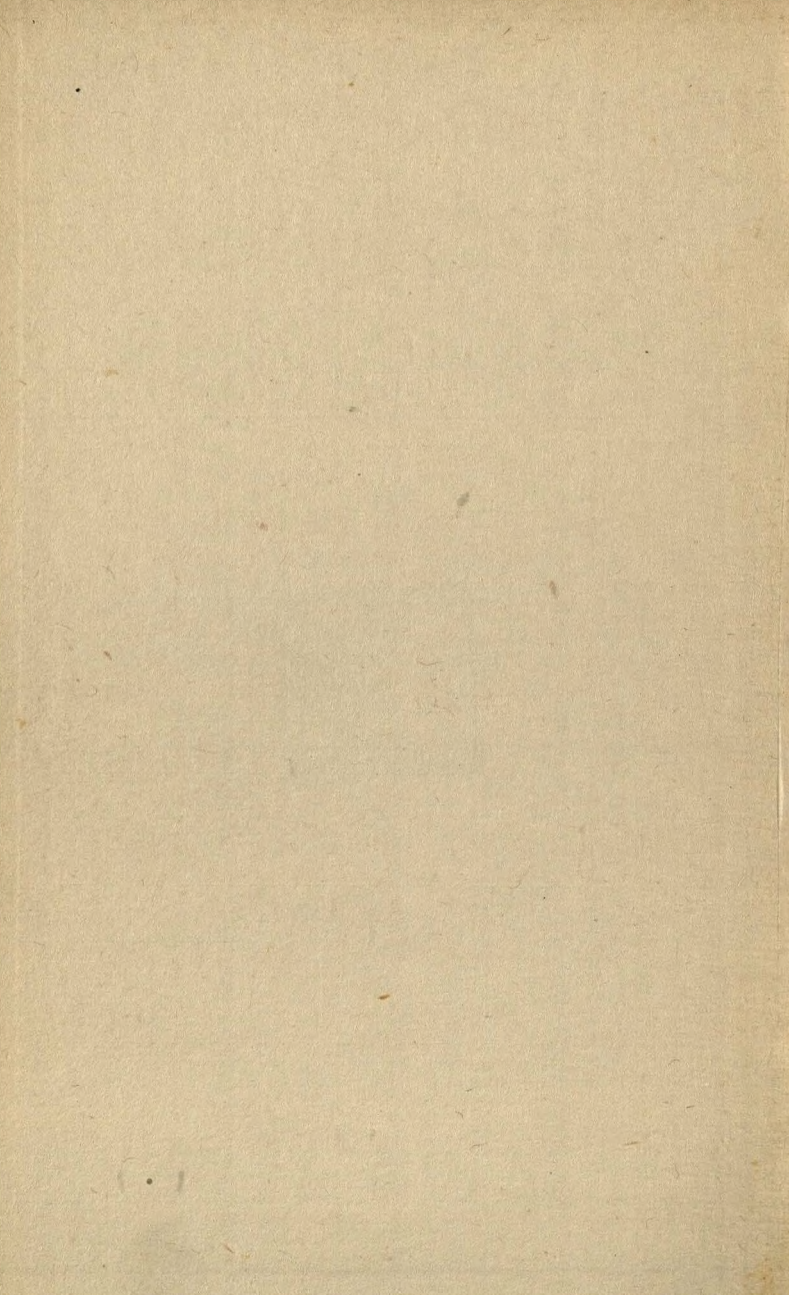
rise to many a superstition among the peasants, who believe in the existence of certain vampires, or ghouls, who have the power of bringing the dead to life and sending them forth to devour the living. These ghouls are known as vrykolakas (βρυκόλακας). They are common enough in Greece and among the Greek islands, but they are particularly abundant and potent at Santorini. Still, in spite of the ghouls, *I want Santorini.*

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