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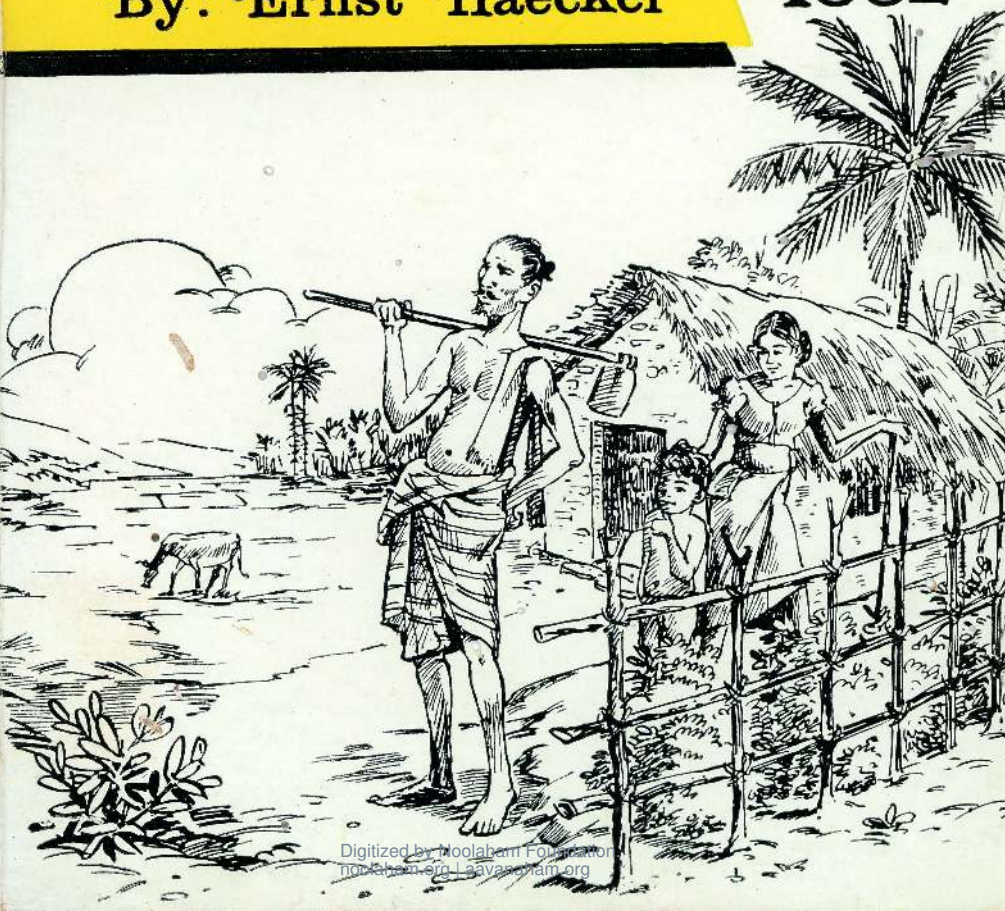
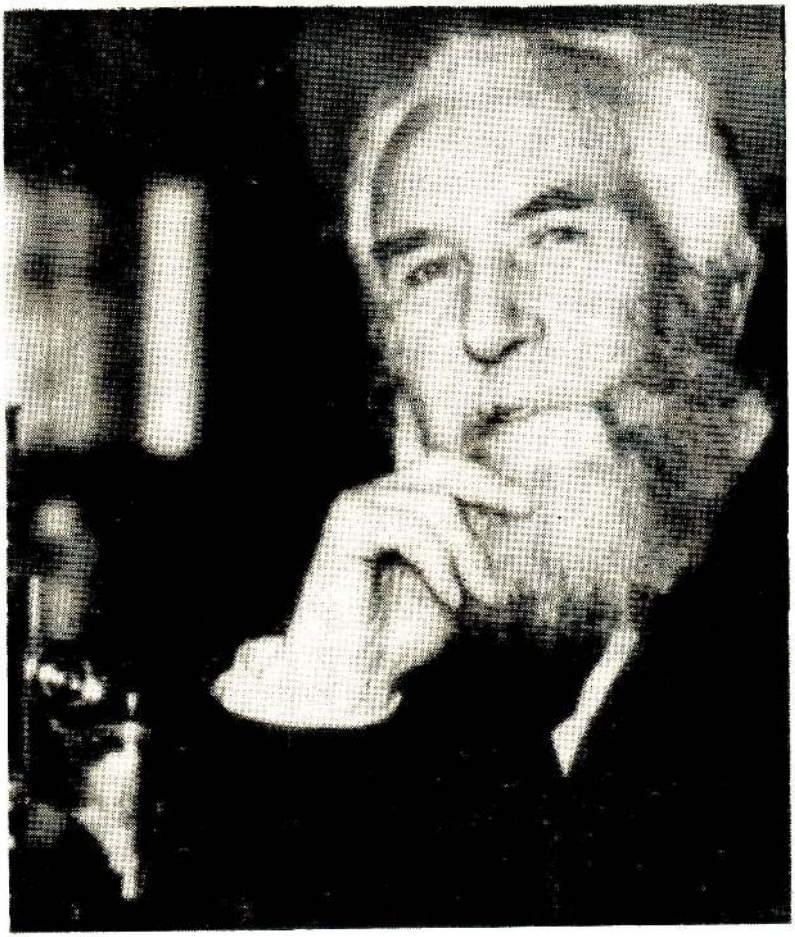
A VISIT TO CEYLON

By: Ernst Haeckel

1882





Ernst Haeckel

Scientist—Philosopher

A VISIT TO CEYLON

By

Ernst Haeckel

Professor in the University of Jena

Author of

The History of Creation,
The History of the Evolution of Man,
etc.

TRANSLATED BY CLARA BELL

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ERNST HAECKEL

Introduction

Ernst Heinrich Haeckel, German scientist philosopher was born at Potsdam, near Berlin on 16th February 1834. He died on 9th August 1919 in Jena, Thuringia in the present German Democratic Republic. He is one of the best known zoologists of the 19th century and is credited with having discovered and named more than four thousand species. He is even better known for his early adoption of Darwin's doctrine of evolution and his confident construction of genealogical trees of living organisms. He also applied the doctrine of evolution to the problems of philosophy and religion in *Die Weltratsel* 1892 (English translation *The Riddle of the Universe* 1899). He was also a distinguished artist and writer of several travel books of absorbing interest.

Even as a boy Haeckel had shown a deep interest in botany and his hobbies included drawing and painting. From 1852 to 1858 he studied medicine and science in Berlin, Wurzburg and Vienna under such distinguished teachers as Johannes Muller, R. Virchow and R. A. Kolliker. His particular interest during his university days was in the field of comparative anatomy and this was to lead him on to the studies in zoology which was later to be the main field of his work.

In 1861 Haeckel obtained a Readership in the University of Jena and in the following year was appointed Professor of Comparative Anatomy and Director of the Zoological Institute. The University created a special Chair of Zoology for him in 1865. Haeckel spent his life in Jena with the exception of the time spent on his various tours

abroad. As a field naturalist he coined the word "Ecology" in 1866, a term which over hundred years later, is today in common use in both scientific and non scientific circles alike.

During his early career, particularly on his expeditions to Italy, Haeckel was mainly concerned with the several forms of lower marine life and discovered and named several thousand different species, particularly of radiolaria and other microspically small unicellular marine animals with minute skeletons. His publications on marine life include *Radiolaria* (1862) *Siphonophora* (1869) *Monera* (1870) *Calcareous Sponges* (1872) *Deep Sea Medusae* (1881) and *Deep Sea Keratosa* (1889).

Haeckel's main contribution to science however was as an enthusiastic propagator of the doctrine of organic evolution as stated by Charles Darwin in 1859 in his famous book *The Origin of Species by Natural Selection.* Darwin in fact believed that it was Haeckel's work which was the chief factor in the acceptance of his doctrine in Germany. In his work Darwin stated that plants and animals have by no means existed forever in their present shape from times past long ago till now but have gradually developed from lower forms of organic life within the course of millions of years.

Haeckel in his work enhanced and supplemented Darwin's theory. From the hypothesis of the origin of life from the first and very simplest forms of life he designed several genealogical trees for flora and fauna including the evolution of man. Haeckel suggested a close relationship between the embryonic development of organisms (ontology) and their gradual development in the history of the earth (phylogeny). According to this idea single stages of embryonic development resemble the ancestors of the respective living creatures. In other words he considered ontogeny as a recapitulation of phylogeny. This principle known as the "Fundamental Biogenetic Law" was succinctly stated in Haeckel's work *Naturliche Schopfungsgeschichte* 1867 (English Translation *History of Creation* 1892).

Haeckel's genealogical constructions culminated with a paper read at the fourth International Zoological Congress held in Cambridge in 1898 where he traced the descent of the human race in twenty six stages from organisms like the still existing Monera — simple structureless masses of protoplasm and the unicellar Protista through the chimpanzees and the Pithecanthropus erectus which he regarded as the link between primitive man and the anthropoid apes.

Haeckel's attempt to apply the doctrine of evolution to the problems of philosophy and religion appeared in *Die Weltratsel* (*The Riddle of the Universe*) published in 1892. To quote the *Encyclopaedia Brittannica* "adopting an uncompromising moistic attitude, he asserted the essential unity of organic and inorganic nature. For him the chemicophysical properties of carbon in its complex albuminoid compounds are the sole and the mechanical cause of the specific phenomena of movement which distinguish organic from inorganic substances, and the first development of living protoplasm, as seen in the Monera, arises from such nitrogenous carbon compounds by spontaneous generation Psychology he regarded as merely a branch of physiology. Every living cell has psychic properties, and the psychic life of multicellular organisms is the sum total of the psychic functions of the cells of which they are composed. Moreover, just as the highest animals have evolved from the simplest forms of life, so the highest human faculties have evolved from the soul of animals. Consequently Haeckel denied the immortality of the soul, the freedom of the will and the existence of a personal God.

"Haeckel occupies no serious position in the history of philosophy, and it can be held that in the formulation of his ideas he was somewhat unscrupulous in his treatment of scientific facts. He is thus exposed to criticism, but he was very widely read in his own day and was very typical of the school of extreme evolutionist thought."

Haeckel's other works include: *Die Systematische Phylogenie* (1894), which has been pronounced his best book; *Anthropogenie* (1874; 5th ed., 1903; Eng. trans., 1879), dealing with the evolution of man; *Uber unsere gegenwartige Kenntnis vom Ursprung des Menschen*, (1898; Eng. trans., *On Our Present Knowledge Regarding the Origin of Man* 1898); *Der Kampf um den Entwickelungsgedanken* (1905; Eng. trans., *The Struggle Over Ideas Concerning Evolution*, 1906); Books of travel such as *Indische Reisebriefe* (1882; 6th ed., 1922) and *Aus Insulinde* (1901). *Kunstformen der Natur* (1904), in 11 parts, consists of exceptionally fine paintings of protozoan organisms. Haeckel was an excellent artist but tended to be led by his imagination.

Though his views may not have had general acceptance Haeckel used to write down his findings in an easy and comprehensive style, so that for the first time a great many common people could get a clear picture of the evolution of plants, animals and human beings. Furthermore, he never ceased to propagate a view of life that was compatible with natural laws.

As a university teacher Haeckel gathered around him a group of disciples who under his inspiration were later to become famous zoologists. Among them are A. Dohrn (founder of the zoological station in Naples), N. N. Miklucho-Maclai (the famous Russian explorer) and the two brothers Oscar and Richard Hertwig. He corresponded with many outstanding scholars of this time. About 30,000 letters are deposited in the Ernst Haeckel House in the University of Jena, all of them addressed to him.

During his lifetime Haeckel travelled to Italy, the Canary Islands, England, Russia, Asia Minor, Egypt and Greece as well as to several other countries. Most important, however, were his two voyages to tropical countries, to Ceylon in 1881 — 82 and to Java and Sumatra in 1900 — 1901. On these travels Haeckel was busy not only as a scientist but also as an artist. There are more than 800 water colours in the Ernst Haeckel House in Jena, among them 70 pictures of Ceylon. Still today people find his vivid accounts of the two voyages of absorbing interest.

It was by his book "*A Visit to Ceylon*" (1882) that Haeckel became known for the first time as an author of travel stories. In this book he tells how he came to make his plan for travelling to Ceylon; "What! Really to India?" So my friends in Jena exclaimed, and so I myself exclaimed, how often I know not, when at the end of last winter (1880-81), and under the immediate influence of our dreary North German February, I had finally made up my mind to spend the next winter in the tropical sunshine of Ceylon, that island of wonders . . . "

Haeckel set out for Ceylon aboard the Austrian Steamship "Helios" and first spent a week in Bombay before going on to Colombo; "It was on the 21st of November (1881), in the glorious light of a cloudless tropical morning that I first set foot on that evergreen island of marvels, Ceylon, where I was about to spend the most instructive and delightful months of my life . . . I was on deck by the earliest dawn, to catch sight at the first possible instant of the longed-for goal of my voyage—the Promised land of my desires as a naturalist . . . "

From Colombo Haeckel went first to the Southern Province where he worked for several weeks in Weligama, to which place he gave the name of "Bella Gemma" (lovely gem) and in nearby villages such as Koggala and its lake of which he has left a vivid account.

Having finished his zoological studies in Weligama, Haeckel made a trip into the highlands and climbed Peak Adam. "It was on 12th February 1882, the very day on which Charles Darwin had seen the light of the world 73 years ago; it was the last birthday of the great reformator in natural science, for death took him away two months later. Standing in awe before the Holy Sripada I made a short speech to my fellow-travellers, pointing out to the significance of the day... The letter in which I reported these events to my honourable friend, and which I had written under the canopy of Sripada, was the last one he received from me. Thus my pilgrimage to Adam's Peak too, ended with some holy remembrance."

Haeckel made the personal acquaintance of some people in Ceylon whom he esteemed very highly Thus he writes about one Abayawira from Weligama who assisted him in his work "I think I can see him now, a tall brown man with expressive and regular features — how his black eyes would sparkle as I explained to him this or that fact in nature, and then in his gentle full voice, he would ask me with respectful confidence to answer some question arising out of the subject. In everything, however, I found the amiable side of the Cinghalese character — a quiet, impressionable nature with a peculiar grace of manner — at its best in Abayawira".

On leaving Ceylon in March 1881 Haeckel put his feelings into these words; "I felt acutely the overwhelming sense of quitting for ever a spot of earth that had grown dear to me."

Haeckel's book was published in German shortly after his return to Europe. In 1883 it was translated into English by Clara Bell under the title *A Visit to Ceylon*. The present unabridged re-print of Haeckel's work has been undertaken as it brings to readers in Sri Lanka one of the most absorbing travel books on the country written in the nineteenth century and by a scientist of international fame.

S. D. S.

Pepiliyana,
27th August, 1975.

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A VISIT TO CEYLON

CHAPTER I

EN ROUTE FOR INDIA

"WHAT! Really, to India?" So my friends in Jena exclaimed, and so I myself exclaimed, how often I know not, when at the end of last winter (1880-81), and under the immediate influence of our dreary North German February, I had finally made up my mind to spend the next winter in the tropical sunshine of Ceylon, that island of wonders. A journey to India is no longer an elaborate business, it is true; in these travel-loving and never-resting times there is no quarter of the globe that is spared by the tourist. We rush across the remotest seas in the luxurious steamships of our days in a relatively shorter time and with less "circumstance" and danger than, a hundred years since, attended the much-dreaded "Italian tour," which is now an every-day affair. Even "a voyage round the world in eighty days" has become a familiar idea, and many a youthful citizen of the world, who is rich enough to do it, flatters himself that he can, by a journey round the world occupying less than a year's time, acquire a more comprehensive and many-sided education than by ten years spent at the best schools.

A voyage to India can lay no claim to any special interest, particularly as an abundant supply of the best literature exists on that wonderful land; and I ought perhaps to offer some exceptional excuse for inviting the reader to accompany me on my six months' journey to and

through Ceylon. You who do so, worthy or fair reader, must permit me to initiate you into my own personal interests as a student and lover of nature, since these and these alone gave occasion to the expedition on which we are about to start.

That every naturalist who has made it his life-task to study the forms of organic life on the earth, should desire to see for himself all the marvels of tropical nature, is self-evident; it must be one of his dearest wishes. For it is only between the tropics, and under the stimulating influence of a brighter sun and greater heat, that the animal and vegetable life on our globe reach that highest and most marvellous variety of form, compared to which the fauna and flora of our temperate zone appear but a pale and feeble phantom. Even as a boy, when my favourite reading was an old collection of travels, I delighted in nothing so much as in the primaeval forests of India and Brazil; and when, somewhat later, Humboldt's "Aspects of Nature,"* Schleiden's "Plant Life,"† Kittlitz's "Aspects of Vegetation,"‡ and Darwin's "Naturalist's Voyage," incited and determined my tastes and influenced my whole life, a voyage in the tropics became the goal of my most eager desires. At first I could only hope to make such a journey as a medical man; and it was principally with this view, that, as a young student, now thirty years ago, I determined on adding medicine to my favourite studies in botany and zoology. But many years were to pass by before the cherished dream was to be realized.

When, twenty-five years since, I had completed my medical course, all the endeavours I made to carry out my project of travelling as a doctor fell to the ground. At last I thought myself fortunate when, in 1859, I was able to make a prolonged tour in Italy, and to spend a year on the beautiful shores of the Mediterranean, which I learnt to love while devoting myself to the study of the multiform inhabitants of its waters. After my return, a regular avocation and a sudden alteration in my private circumstances threw all further projects of travel into the background. At Easter, 1861, I was appointed to a professorship in the University, which I have now held for twenty years, spending my vacations, after the example of my illustrious master and friend, Johannes Muller, in excursions to the sea coast, for purposes of study. A special passion for the most interesting branch of zoology: the lower orders

* Translated by Mrs. Sabine. Lond. 1849.
† The Plant: translated A. Henfrey. Lond. 1848.
‡ Vegetations-Ausichten. Wiesbaden, 1854.

of marine creatures, and above all Zoophytes and Protozoa—to which Muller himself had directed my attention in Heligoland, in 1854—led me in the course of the next twenty years to visit the most dissimilar shores of Europe. In the preface to my work on the Medusae, I have given a brief account of the various spots on the coast where, during this period, I fished, dredged and observed, worked with the microscope, and made drawings. But still the varied shores of the peerless Mediterranean, in many respects unique, always proved the most attractive.

Twice, however, I was enabled to outstep the limits of this delightful province. I spent the winter of 1866-67 in the Canary Isles, for the most part in the volcanic and almost barren rock of Lancerote; and early in 1873, I made a wonderful excursion in an Egyptian man-of-war, from Suez to Tur, to visit the coral-reefs of the Red Sea, and I there wrote my monograph on the corals of the Arabian coast.* On both occasions I very nearly reached the tropical zone, and lived at a few degrees only to the north of it; but in each case I was within reach of a region which is but meagrely endowed with its principal charm, the glory of tropical vegetation.

The more the naturalist sees and enjoys of the beauties of Nature on this globe, the more he longs to extend the domain of sight. After a delightful autumn visit, which I paid in 1880 to the castle of Portofino, near Genoa—a pleasure I owe to the kind hospitality of the English consul, Mr. Montagu Brown—I returned loaded with a mass of interesting zoological and botanical experiences to the quiet little town of Jena. But, only a few weeks later, accident threw into my hands—not for the first time—the beautiful work on Ceylon, by Ransonnet,† the Viennese painter, and my recollections of the charms of Portofino made the more splendid marvels of the cinnamon island seem doubly and overpoweringly attractive, though I had often before dwelt on them with wistful yearning. I looked up the various routes to India, and discovered, to my joy, that "the struggle for existence" among the various lines of steam-packets had, within the last few years, considerably reduced the high fares, and had probably also diminished the various discomforts of the voyage. But tempting above all was an announ ement that the Austrian Lloyd's Company had now opened a double service of steamships to India from Trieste, both of which touched at Ceylon. I had the

* Arabische Korallen. Berlin, 1875.
† Ceylon, Skizzen seiner Bewohner, Thier-und Pflauz-Leben. Braunschweig, 1868

most favourable recollections of this company's vessels from many passages on the Mediterranean, and by their agency I could hope to attain my end most safely, comfortably, and easily.

The sea voyage from Trieste to Ceylon, *via* Egypt and Aden, occupies about four weeks; six days are spent in the passage from Trieste to Port Said, two in the Suez Canal, six in the Red Sea, and eleven in crossing the Indian ocean from Aden to Ceylon. Three or four days are spent at the different ports touched at. Thus, if I could obtain six months' leave of absence, I might allow two months for the voyages out and home, and reckon on four months' stay in Ceylon itself. With its fine climate and the good order prevailing in this beautiful island, the journey offered no prospects of danger. Besides, I reflected that I was already eight and forty, and that consequently it was high time to undertake the journey, if it was ever to be accomplished at all. Various circumstances, which are of no importance here, favoured a prompt decision; so by Easter, 1881, I had sketched a plan of my journey, and at once began my preparations for carrying it out. The leave of absence, as well as a considerable sum of money for beginning a collection of the Natural History of India, was liberally granted by the grand ducal government of Weimar. In order to qualify myself to make the best use of the short time at my disposal, I read all the most important works on Ceylon and its natural products; above all, the admirable description, which to this day retains its value, in Carl Ritter's classical work* and Sir Emerson Tennent's important book, "Ceylon, an account of the island, physical, historical, and topographical."† I also looked through a number of traveller's narratives, old and new, which contained some account of the island.

I then inspected, repaired, and completed the various instruments and apparatus for examining and collecting specimens which always formed part of my paraphernalia in my voyages along the coast, and I added considerably to their number. I took advantage of the summer months to learn and practice various arts which I deemed might prove especially useful and desirable on this journey—such as oil-painting, photography, the use of a gun, of nets and traps, soldering metal, etc. As the climate seemed to render it advisable that I should not start before the middle of October, I spent the autumn holidays in Jena,

* Erdkunde: Ostasien, vol. iv. pt. ii.

† London, 1860.

busied in making preparations and in packing my very considerable apparatus. Although the special object of my journey was to be restricted within the limits of my own departments of study, more particularly animal and plant life, there were many other questions in natural history to which I might be able to render subsidiary aid, and which I must be more or less ready to investigate.

The naturalist who in these days betakes himself to the coast to carry on his studies of animal and plant life no longer finds his microscope, his dissecting knife, and a few other simple instruments a sufficient equipment, as he would have done twenty or even ten years since. The methods of biological, and more particularly of microscopical research, have been developed and perfected within the last decade in a very remarkable degree; an elaborate and extensive array of instruments of the most various kinds is indispensable to enable him at all to meet the requirements of the present day.

In fact, no less than sixteen trunks and cases were shipped at Trieste as my luggage. Two of these were filled with books—none but the most necessary scientific works; two others contained a microscope and instruments for observations in physics and the study of anatomy. In two other cases I had apparatus for collecting and materials for preserving specimens; soldered tins, containing different kinds of spirit and other antiseptic fluids, carbolic acid, arsenic and the like. Then two cases contained nothing but glass phials—of these I had some thousands—and two more were packed with nets and appliances of every kind for snaring and catching the prey; trawls and dredging nets for raking the bottom of the sea, sweeping and landing nets for skimming the surface. A photographic apparatus had a chest to itself, and one was filled with materials for oil and water-colour painting, drawing and writing; another was packed with a nest of forty tin cases, one inside the other, and so arranged that when I should have filled one with specimens I could myself easily solder down the flat tin lid. Then another contained ammunition for my double-barrelled gun—a thousand cartridges with different sizes of shot. Most of these fourteen cases were covered with tin and soldered down in order to protect their contents from damp, come what might, during the long sea voyage. Finally, in two tin trunks I had clothes and linen to last me during my six months' wanderings.

In view of this somewhat considerable outfit, which it had cost me no small care and trouble to prepare and pack, even before I left Jena, I may think it particularly fortunate that one wish that I had eagerly cherished at the beginning of my enterprise failed of fulfilment. It is a well-known fact that among all the recent investigations of marine life none have yielded such grand and surprising results as the deep-sea soundings which we owe to the English naturalists, Sir Wyville Thomson, Carpenter, John Murray, Moseley and others. While, twenty years ago, the depths of the ocean were supposed to be devoid of life, and an universally accepted dogma asserted that organic life ceased at a depth of two thousand fathoms below the surface of the sea, the brilliant researches of English voyagers during the last ten years have proved the contrary. It has been found that the bottom of the sea, as far down as it could be investigated—to a depth of twenty-seven thousand feet—is thickly peopled with animals of various orders; for the most part with creatures hitherto unknown to science, and displaying at different zones of depth a variation corresponding to that of the zones of vegetation at different levels on mountain heights.

All deep-sea soundings, however, and, particularly the very remarkable and unprecedented researches of the "Challenger expedition," had been made in the Atlantic ocean and some small areas of the Pacific; the immense province of the Indian ocean, on the other hand, remained unexplored, or excepting at most a small tract at the very south. An undreamed wealth of new and unknown deep-sea creatures no doubt remained to be discovered by the happy naturalist who should be the first to cast the improved deep-sea net now in use in the unexplored depths of the Indian ocean. It was, therefore, certainly excusable if a wish to find these hidden treasures influenced my first sketch of my journey. Why should not I be the first to make the trial—perhaps to fail, like so many others—still, at any rate to try? Deep-sea sounding is, to be sure, a very expensive amusement, even when it is undertaken in the simplest and least expensive manner possible, as I should have done it. I could not, in any case, think of making such an attempt out of my own modest private resources. However, I might try to obtain means for such a purpose from different institutions founded for the encouragement of scientific discovery. The most important and influential institution of this kind in Germany is the Academy of Sciences in Berlin, and many travellers have received considerable assistance,

partly out of its own ample funds and partly out of the Humboldt endowment of which it has the control.

When, at Easter, 1881, I took the opportunity of a short visit to Berlin to discuss my approaching journey to Ceylon with my friends there, I was strongly urged by them to apply for the travelling allowance granted out of the Humboldt fund, at that time unemployed; particularly as it had then accumulated to a very considerable sum. I must confess that it was with much reluctance that I consented to act on my benevolent friends' suggestion. For, on one hand, I had hitherto achieved all my scientific excursions, during more than five and twenty years, without any help of the kind, and had learnt the art of carrying out the object of my journey, even in very narrow circumstances, and with the most moderate private means; and, on the other hand, the most influential members of the Berlin Academy were, as was well-known, the most vehement opponents of the doctrine of evolution, while I, for many years, had been deeply interested in its advancement and development. It was there that an attempt had been made to set a barrier to its irresistible progress, of which the motto should have been "*Ignorabimur et restringamur*," to which I had retorted, "*Impavidi progrediamur*;" and I knew beforehand that this challenge would never be forgiven. I was therefore not surprised when, a few months later, my Berlin friends were informed that the Academy had simply refused the application.

This annihilated my hopes of deep-sea discovery in the Indian ocean; it is still left to another and a more fortunate man to raise its treasures of zoology from "the vasty deep." I could only hope that the surface of the tropical seas might yield so much that was new and interesting that the short time granted me might not exhaust them; and, at any rate, standing entirely on my own feet, that first of blessings would be mine on which I had long since learnt to set due value, perfect freedom and independence.

In contrast to these and other unpleasant experiences in preparing for my journey, I am so happy as to be able to express my most heartfelt thanks to the far more numerous circle of those kind friends who, so soon as they heard of my scheme, accorded me their warmest sympathy and did all in their power to encourage and promote it. Foremost of these I must name Charles Darwin and Dr. Paul Rottenburg, of Glasgow; Sir Wyville Thomson and John Murray, of Edinburgh; Professor Eduard Suess, of Vienna; Baron von Konigsbrunn, of Gratz; Heinrich

Krauseneck, and Captain Radonetz (of the Austrian Navy), of Trieste. I feel no less bound to express my grateful acknowledgments to the grand ducal administration of Weimar for its generous encouragement of the objects of my journey, and especially to his Royal Highness the Grand Duke Carl Alexander of Saxe Weimar, *Rector magnificentissimus* of the University of Jena, and to the prince his son. By their kind offices I had an introduction from the English Colonial Secretary to the Governor of Ceylon; I was also abundantly supplied with other recommendations. Finally, let me here offer the right hand of friendship to my many good friends and colleagues at Jena, who all in their several ways command my gratitude for their assistance in my undertaking.

When, at last, all my preparations were completed, and twelve of my cases, which had been forwarded some weeks previously, were reported safe at Trieste, I left my quiet home at Jena on the morning of October the 8th. The parting was no trifle; I felt keenly what for many weeks had been growing upon me with increasing anxiety—that a separation for six months from wife and children, with five thousand miles of land and sea to part us, was no light matter for the father of a family at the age of eight and forty. How differently could I have started, without a shadow of care, in the vigour of youth twenty-five years since, when such an expedition was the height of my hopes and I would have dared everything to achieve it. Twenty years of teaching had of course made me familiar with the problems of my own department of zoological research, and being acquainted beforehand with the special questions on which my journey was to throw light, I could no doubt solve them better and in a shorter time now, when I had experience to aid me, than a quarter of a century earlier; thus I might look forward to fuller results. But was not I myself by so many years older? Had I not lost so much of my elasticity of mind and vigour of body? And would the actual living wonders of the most luxuriant tropical scene make as vivid impression on me now, when I had so far mastered the more abstract generalizations of natural science, as they undoubtedly would have made then? Had I not once more reached a stage—as I had often done before—where my excited imagination had conjured up a magical picture which, when I approached the sober reality, would vanish into vacancy, like the *Fata Morgana*?

These and similar reflections, mingled with sadness at parting from my family and home, floated across my mind like dark clouds as I was

carried along the Saale railway from Jena to Leipzig, early on the 8th October; and a cold, dim, autumn fog hung round me, filling and shrouding the pretty Saale valley. Only the highest points of our *Muschel kalk* hills stood out above the rolling sea of mist—on the right the lengthy slope of the Hausberg with its "redly gleaming summit," the proud pyramid of the Jenzig, and the romantic ruins of Kunitzburg; on the left the wooded heights of Rauthal, and farther on Goethe's favourite retreat, delightful Dornburg. I registered a solemn promise to my old and beloved mountain friends, that I would return in spring, in good health and loaded with treasures from India; and they, in ratification, sent me back a morning greeting, for even as we swept past their feet, the haze rolled away from their heads and sides before my eyes, and the victorious sun mounted in golden radiance, while the clouds cleared from the sky; a most exquisite autumn morning sun shone out in all its beauty, and the dewdrops twinkled like beads on the delicately fringed cups of the lovely dark blue gentians which abundantly gemmed the grassy slopes on each side of our iron road.

I took advantage of a few hours' detention in Leipzig to fill up some deficiencies in my outfit, and to refresh myself with gazing in the picture gallery at the masterpieces of the landscape painters, Preller, Calame, Gudin, Saal and others. In the afternoon I proceeded to Dresden, and from thence, by the night express, reached Vienna in twelve hours. After a short rest I set out again by the southern line of railway for Gratz. It was a splendid autumn Sunday, and the Alp-like scenery of Semmering smiled in perfect beauty. Here, in the wooded gorges and on the flowery downs of lovely Steiermark, I had botanized, twenty-four years before, with really passionate zeal: every height of the Schneeberg and of the Rax-Alp was fresh in my memory. The young M.D. had devoted himself far more eagerly to the interesting flora of Vienna, than to the learned clinical lectures of Oppolzer and Skoda, of Hebra and Siegmund. When drying the prodigious quantities of exquisite and minute Alpine plants which I collected on the hills of Semmering, often had I dreamed of the widely different and gigantic flora of India and Brazil, which display the plasmic force of vegetable vitality with such dissimilarity of form and size; and now, in a few weeks, that dream would be realized in tangible actuality!

At Gratz, where I spent a day, I found capital accommodation at the Elephant Hotel. The first inn where it was my fate to put up on my way

to India could have had no more appropriate name; for, not only is the elephant one of the most important and interesting of Indian beasts, but it is the badge of the island of Ceylon. And I took it as of good omen for my future acquaintance with the real elephants which I hoped so soon to see, both tame and wild, that the Elephant at Gratz should, meanwhile, entertain me so hospitably and comfortably. I will take this opportunity of introducing an incidental remark for the use and benefit of such travellers as, like myself, look rather for kind attention at an inn than for a crowd of black-coated waiters. During my many years' wanderings, having had occasion to pass the night in hotels and inns of every degree, it has struck me that the character of these public refuges may be, to a certain extent, guessed at, merely from their name and sign. I divide them into three classes: the zoologico-botanical, the dubious, and the dynastic. Now by far the best inns, on an average, are those with zoologico-botanical signs, such as the Golden Lion, the Black Bear, White Horse, Red Bull, Silver Swan, Blue Carp, Green Tree, Golden Vine, etc. You cannot count so confidently on good and cheap entertainment in such inns as I have designated as dubious, belonging neither to the first class nor the third; they have a great variety of names, often that of the owner himself, and are too miscellaneous as to quality for any general rules to be given for judging of them. On the other hand, I have had, for the most part, the saddest experience—more especially of the converse relation of bad entertainment and high prices—of those hotels which I call dynastic; such as the Czar of Russia, King of Spain, Elector of Hesse, Prince Carl, and so on. Of course I do not pretend that this classification is of universal application; but, on the whole, I believe that all judicious and unpretentious travellers, particularly the young, will find it justified, especially artists, painters, and naturalists. And the Elephant at Gratz was perfectly worthy of its place of honour in the zoological class.

I had been tempted to spend a day in Gratz by the friendly invitation of a distinguished landscape painter residing there, Baron Hermann von Konigsbrunn. He had written to me some months since, saying that he had heard of my proposed voyage to Ceylon, that he had passed eight months there of great enjoyment, twenty-eight years before, and had made a large collection of sketches and pictures, more particularly studies of the vegetation, which might perhaps prove interesting to me. This kind communication was of course most welcome. I myself

could have no better preparation for sketching in Ceylon than looking through the Gratz painter's portfolios. He had made a tour through the palm forests and fern-clad gullies of the cinnamon isle, in 1853, in the society of Captain von Friedan and Professor Schmarda, of Vienna. The professor has given a full account of his residence in the island in his "Voyage round the World." Unfortunately the numerous very admirable drawings which Baron von Konigsbrunn made on the spot, and which were intended to illustrate Schmarda's travels, have never been published. This is the more to be regretted because they are among the best and most highly finished works of the kind that I have ever seen. Even Alexander von Humboldt—certainly a competent judge—who laid them before King Frederick William IV, spoke of them in terms of the highest praise. Konigsbrunn's studies in Ceylon combine two qualities which almost seem incompatible, and which unfortunately are very rarely met with together in works of this kind, though both are equally necessary to give them the true stamp of perfect resemblance: on one hand, the greatest truth to nature in rendering with conscientious exactitude all the details of form; on the other, a delightful artistic freedom in the treatment of each part, and effective composition of the picture as a whole. Many works by our most famous landscape painters, which fulfil the second of these conditions, utterly fail in the first. On the other hand, many studies of vegetation, as represented by practised botanists, are painfully devoid of the artist's independent feeling for beauty. But one is just as necessary as the other—the botanist's analytical and objective eye, the artist's synthetical and subjective mind. If a landscape is to be a real work of art it must, like a portrait, combine perfect truth and nature in the details with a broad grasp of the character of the model as a whole and this is conspicuous in the highest degree in Konigsbrunn's pictures of Ceylon. In these respects they quite come up to the mark of Kittlitz's famous work "The Aspects of Vegetation," which Alexander von Humboldt declared to be in his day, an unapproachable model beside which few could hold their own. I may, perhaps, venture in this place to express my best thanks to an artist who is as amiable and modest as he is original and gifted, and at the same time a hope that his noble works may ere long find their way out of the peaceful obscurity of his studio and meet with public notice and the recognition they deserve.

After taking an affectionate leave of many old and new friends in Gratz, I set out southwards again on October 11th for Trieste direct. An elderly man took his seat opposite to me in the carriage, whom I recognized as an Englishman at the first glance, and who, in the course of half an hour's conversation, introduced himself as a personage of the greatest interest to me—Surgeon-General Dr. J. Macbeth. He had served for thirty-three years as surgeon to the English forces in India, had taken his share of toil in several wars and in all parts of India, from Afghanistan to Malacca, and from the Himalayas to Ceylon. His wide experience of the country and people, as well as his observations as a medical man and a naturalist, were to me of course highly interesting and instructive, and I almost regretted that, at ten o'clock that evening, our arrival at Trieste put an end to our conversation.

The three days in Trieste before the Lloyd's steamer was to sail, were for the most part taken up in anxieties concerning my outfit and luggage, which I had deferred till the last. I stayed at the house of my dear and honoured friend, Heinrich Krauseneck (a nephew of my father's old friend and comrade, the Prussian general, famous in the war for liberty). The warm and friendly reception which I had already found here on many former occasions was now especially comforting to me, and greatly softened the pain of quitting Europe. Other kind friends also met me with their wonted heartiness, and once more I bid farewell to the great Austrian port and emporium with a feeling of leaving a portion of my German home behind me. And the hours flew by so quickly that I could not even pay a visit to the poetic site of Miramar, that matchless castle by the sea, whose beauty and situation seem to point it out as the most fitting scene for an act in the tragedy of the Emperor Maximilian of Mexico. What a subject for some dramatist of the future!

Nor was there time even for an excursion to the neighbouring bay of Muggia. This lovely bay, teeming with marine life, is rendered famous to naturalists by Johannes Muller's discovery of the singular univalve *Entoconcha mirabilis*, which lives inside the Holothuria. On former visits to Trieste I had often dredged there, and almost always with success; but now the prospect of Indian fishing threw the Mediterranean into the background. Besides, my ponderous baggage absorbed all my attention. By the day before the start all the cases were safe on board the ship, and all my preparations were complete. With regard both to the

packing and transport of all this luggage, as well as in all that regarded my personal accommodation and comfort as a passenger, I met with the kindest attention and most efficient aid from the directors of the Austrian Lloyd's Company, particularly with reference to the scientific aim and object of my journey. That liberal and intelligent body having already afforded special assistance and facilities to other scientific voyagers, I hoped for some such help in my own expedition. This I received to the very fullest extent, and I am doing no more than my duty in recording here my heartiest and sincerest gratitude to the chairman of the company, Baron Marco di Morpurgo, as well as to the board of directors, and among them particularly my distinguished friend, Captain Radonetz, of the Austrian navy. Not only was I provided with a special and most effective letter of recommendation to each and all of the company's agents and officers, not only was one of the best first-class cabins on board the ship I sailed in devoted to my exclusive use, but a considerable reduction in expense was allowed me and every possible comfort ensured.

And now on board at last, on the fine, safe steamship which is to carry me in four weeks to the shores of India. I had my choice of two first-class vessels belonging to the company, both starting on October 15th from Trieste for India *via* the Suez canal. The first, the *Helios*, touches only at Aden and proceeds direct to Bombay; there it remains for eight days and then goes on to Ceylon, Singapore and Hong Kong. The second steamer, the *Polluce*, on its way from Suez down the Red Sea, touches at Djedda, the port for Mecca, and then proceeds from Aden to Ceylon and on to Calcutta. I selected the *Helios*, as this would give me an opportunity of seeing Bombay and a part of the Indian peninsula, which I otherwise could scarcely have accomplished. Moreover, the *Helios* was the finer, swifter, and larger vessel, quite new, and of a most inviting appearance. Finally, the name of the ship attracted me strangely, for could the good ship which was to transport me within the short space of one month as if it were Faust's magical cloak, from the grey and foggy shore of my northern home, to the sunlit and radiant palm-groves of India, have a name of better omen than that of the ever-youthful Sun-god? Was it not my very purpose to see what the all-powerful and procreating Sun could call into life in the teeming earth and seas of the tropics? *Nomen sit omen*! And, after all, why should not I cherish my scrap of superstition like any other man? Moreover, I could surely count on the good graces of the *Helios*, since I had already called

a whole class of humble phosphorescent Protozoa *Heliozoa*—creatures of the Sun—and only a few weeks previously, when completing my new system of classification of the Radiolaria, had named a number of new genera of these elegant atoms in honour of *Helios*: *Heliophacus*, *Heliosestrum*, *Heliostylus*, *Heliodrymus*, etc. So, I beseech thee, adored Sun-god, that this my zoological tribute may find favour in thine eyes! Guide me, safe and sound, to India, that I may labour in thy light, and return home under thy protection in the spring!

The Austrian Lloyd's steamship *Helios* is one of their largest and finest vessels, and as that floating hotel was for a whole month my most comfortable, clean and hospitable home, I must here give some account of her build and accommodation. She is long, narrow and three-masted; her length being 300 feet (English), her breadth 35 feet, and her depth, from deck to keel, 26 feet. Above this a saloon is built, nine feet high. She registers 2380 tons; the engines are of 1200 horse-power (400 nominal). The forepart contains the second cabins with a saloon; and over it, the stalls for our floating cattle farm, including a few cows and calves, a flock of fine Hungarian sheep with long twisted horns, and a large number of fowls and ducks. The middle portion of the vessel is occupied by the mighty engines, which work not only the screw, but the rudder, the various cranes, and the machinery for the electric light; the apparatus for distilling drinking water is also connected with them, and behind is a large hold for storing the passengers' luggage. The after-part of the ship is principally occupied by the best cabins, which have two spacious and airy saloons, one above and one below the deck; an open gallery runs round the upper saloon, and the cabins open into the lower one. Half a dozen sleeping cabins, more roomy and pleasant than the others, adjoin the upper saloon, and one of these was assigned to me. All the cabins are well furnished, have good-sized windows and electric bells. Behind the upper saloon there is a smoking-room; there are baths and other conveniences, which are absolutely indispensable to the luxury-loving travellers of the present day, more particularly a large ice-room at the bottom of the hold. The kitchen and apothecary's stores, and most of the officers' cabins, are in the middle. Comfortable divans, fitted with leather cushions, run round the upper saloon, with two rows of wide tables, where some of the passengers are engaged in eating, playing games, writing, painting, and other occupations. In fine weather they sit for the most part on the upper deck or roof of the

saloon, which is shaded from the fiery shafts of the *Helios* of the tropics by a double canvas awning, and by curtains at the sides. Here they can walk up and down, or lean over the railing and gaze into the blue sea, or lie at full length in the long Chinese cane chairs, and dream as they stare at the sky.

On the very first day of the passage, with a somewhat rough sea, we discovered that the vessel rode the waves in capital style, and particularly that she hardly rolled at all. The perfect cleanliness on board was a pleasure in itself, and the absence of that horrible smell, compounded of the odours of the kitchen, the engine-room, and the cabins, which is a prevailing characteristic of the older vessels, and contributes far more to produce sea-sickness than the rolling or pitching of the ship; and in fact I, as well as most of the other passengers, escaped sea-sickness throughout the voyage. The weather was uninterruptedly fine, and the sea calm. Of all the many voyages I have ever made, this which was the longest, was also the pleasantest. Excellent company contributed in no small degree to make it agreeable, and the friendliness of the amiable and cultivated officers of the ship. I have the pleasure of expressing my warmest thanks to them all, and particularly to Captain Lazzarich and Dr. Jovanovich, the ship's surgeon, for their obliging kindness during the whole passage. The service and entertainment also left nothing to be desired, as I have usually found to be the case on board the Austrian Lloyd's steamships.

The regular service by steam between Europe and India is carried on by four different companies. First, the Austrian Lloyd's ships from Trieste; secondly, the Italian Rubattino Company from Genoa to Naples; thirdly, the French Messageries Maritimes of Marseilles; and fourthly, the English Peninsular and Oriental Steam Navigation Company, which carries the weekly overland mails from England, *via* Brindisi and Suez. It is also used by most of the English, and by all to whom the highest possible speed is a matter of importance. The regular mail steamships of the P. and O. make from eleven to twelve nautical miles an hour, while the other companies make at the most from eight to ten; the *Helios* averaged nine. This considerable difference in speed is simply a question of money. The additional cost of high speed is out of all direct proportion. A steamship which makes twelve instead of eight miles an hour—one-third more—consumes, not one-third more coals, but three times as many; not twelve loads of coals instead of eight, but twenty-four. This enormous disproportion is covered in the case of

the P. and O. by a special subsidy from the English Government, since it is, of course, of the first importance that the weekly mails between England and India should be conveyed with the greatest possible dispatch. Other companies, who have not this compensation, cannot compete with the P. and O. But then a first-class through ticket from Brindisi to Bombay costs £66, and by the Austrian Lloyd's £44—a difference of one-third, making a difference in the double journey of £44; and for that sum a pleasant little tour may be accomplished in Switzerland next autumn, after the return home.

Greater speed is, however, the only advantage offered by the English company. The service and comfort are conspicuously inferior to those on the vessels of the other three, and the officers and men—from the captain and the first-lieutenant to the steward and cabin servants—are not, as a rule, distinguished by their polite and obliging conduct. Besides this, these ships are usually crowded, and the passengers' servants are chiefly native "boys," who are officious rather than helpful. This is an inconvenience also met with on board the French Messagerie vessels, which, in other respects, are admirable. The Italian Rubbattino vessels, on the other hand, leave much to be desired as to comfort and cleanliness in the cabins. I give these remarks for the benefit of other travellers to India, from information derived from several passengers whom I asked, both on this and on former journeys, and whose reports agreed, though much more than half of my authorities were themselves English. Thus the Austrian Lloyd's ships are the most to be recommended, and next to these the Rubattino line, or the Messageries Maritimes; the P. and O. standing lowest on the list.

The party who had assembled on board the *Helios* by noon on October 15th—and who were all going to disembark at Bombay, with the exception of a Hungarian count who was bound for Singapore, and myself—consisted chiefly of English, some being officers and civil servants, and others merchants. The smaller half were Germans and Austrians, some of them merchants and some missionaries. The fair sex was but feebly represented by one German and five English women. Our amiable countrywomen contributed materially to the pleasures of conversation, and her singing in the evenings to the piano delighted the whole company. She had been spending the summer with her children at Frankfort-on-the-Maine, and was now returning for the winter to her husband at Bombay—a half-yearly alternation of her

affection as a mother and as a wife, which, unfortunately, is a duty with most English and German women in India, who watch over the growth and education of their children. Most families of the educated class are forced to send their children to England or Germany after the first few years of their life, not merely on account of the unfavourable effects of a tropical climate on the delicate constitutions of European children born in India, but, even more, to avoid the evil moral influence incurred at every moment through intercourse with the natives, and to gain the benefit of a well-directed education.

Besides my charming fellow-countrywoman, there were English ladies on board who, like her, travelled regularly between Europe and Bombay, passing the summer with their children and the winter with their husbands. But, quite irrespective of the two months spent in travelling, this must be a very uncomfortable mode of family life, and it is very natural that a European merchant should strive above everything to shorten his residence in India as much as possible, and gain as quickly as may be such a fortune as will enable him to return to his northern home. A passion for that home is to almost all of them the guiding star of their indefatigable activity, however much they may become spoilt in some respects by the ease and luxury of a residence in India.

As is always the case on long sea voyages, the passengers were fairly acquainted within a day or two, and segregated into groups who settled into closer intimacy. The German and English missionaries, and with them an American, Mr. Rowe, who has written a capital book called "Everyday Life in India," formed a party by themselves; a second consisted of the English officers, civilians and merchants; a third of the German and Austrian passengers, who were joined by the captain and doctor and myself. The weather was almost always serene, the sky bright and cloudless, the sea calm or but slightly ruffled, and our good ship reached its stopping places punctually to its time. Sea-sickness claimed but few victims, and those only for a short while; but then, on the other hand, the very monotony of a perfectly calm passage increased for most of the passengers the inevitable tedium. Every occupation usually taken up as a remedy had lost its effect by the end of the first week: reading and writing, chess and cards, piano and singing; and the five meals which, on board Indian steamships, divide the day into five periods, gained in importance every day. Unfortunately the limited

capacity of a poor German professor's stomach is in my case aggravated by a weak constitution. Although I am rarely sea-sick, and then only in very rough weather when the motion of the ship is considerable, I always lose my appetite on a long sea voyage, while most other passengers find theirs increase in direct proportion to their days on board. However, I could with the greater ease constitute myself an impartial observer of the colossal capacities of others, and of the incredible pitch which what physiologists style hypertrophy can reach at sea; the absorption, that is to say, of superfluous quantities of food and drink absolutely unnecessary for the maintenance of a healthy frame. I had long wondered with silent envy at the amazing powers in this respect of our more fortunate cousins on the other side of the English channel, on land as well as at sea, far transcending those of most Germans; but what I saw an English major accomplish on board the *Helios* surpassed everything I ever saw before. Not only did this worthy gentleman consume a double allowance at each of the five regular meals, and wash it down with a few bottles of wine and beer, but he contrived to fill up the short intervals between them, in a most ingenious manner, with snacks and biscuits and a variety of drinks. This gastronomical marvel appeared to me to have reached the extreme limits of such development as consists in the uninterrupted activity of the organs of digestion; and I am inclined to believe that this activity was kept up throughout the night, for quite early in the morning I have seen him reeling, totally incapable, out of his cabin-door. Indeed, I repeatedly heard it asserted that most of those English who sicken and die in India incur their fate through such intemperance.

The five grand meals on board the Indian steamships constitute a far too important—indeed, to many of the passengers, the most important—incident of daily life for me to feel it less than a duty to acquaint the curious reader with their composition according to contract. In the morning, at eight, coffee and bread are served; at ten, a serious breakfast with eggs dressed in two ways, two kinds of hot meat, curry and rice, vegetables and fruit; at one, the Indian tiffin—a meal of cold meat, with bread, butter, potatoes and tea; at about five, dinner, consisting of soups, three varieties of meat, with concomitants, puddings, and dessert of fruit and coffee; finally, at eight, tea again, with bread and butter, etc. I limited my own gastronomical efforts to the first, third, and fourth of these tasks, and could never fully perform even those. Most of the passengers, however, never missed one of these entertainments, and after each would go to the upper deck and there promenade for half an

hour, or throw themselves into a cane *chaise-longue* and, while they stretched their limbs, contemplate surrounding nature—the clouds in the sky or the blue waves. A most welcome excitement is occasioned under such circumstances by the sight of some creature breaking the monotonous level of the waters; schools of dolphins, which tumble round the ship in graceful sport, raising their backs high above the water; sea mews and petrels, soaring in wide circles and dipping suddenly for a fish; flying-fish, skimming the smooth surface in shoals, and fluttering like ducks for a longer or shorter space on the glassy water. I myself was delighted above all to recognize my old favourites, the fragile Medusae, whose floating swarms I never failed to find in the Indian seas, as well as in the Mediterranean. I only lamented, as I had so often done before, that the rapid course held by the ship prevented my bringing the lovely sea-nettles on board in a bucket. I met with two large Medusae (Rhizostomae), which are extremely numerous in the Mediterranean—the blue *Pilema pulmo*, and the golden-brown *Cotylorhiza tuberculata*; in the Indian seas, on the other hand, two fine Semostomae were particularly abundant, a rose-coloured *Aurelia* and a dark-red *Pelagia*.

Our twenty-four days' passage from Trieste to Bombay was, under these favourable conditions, so normal and uneventful that there is little to be said of it on the whole. The *Helios* weighed anchor at four in the afternoon of October 15th, and, bidding an affectionate farewell to our Trieste friends, we steamed out in a most beautiful autumn evening and away down the blue Adriatic. On former voyages on this sea I had for most of the time had a view of the picturesque coasts of Istria and Dalmatia, and the rosemary-scented isles of Lissa and Lesina, where, in 1871, I had spent a delicious month in the romantic Franciscan convent with the worthy Padre Buona Grazia. But on this occasion the *Helios* took a more westerly course at once, towards the middle of the gulf, since we were to put in to Brindisi to take up some more passengers. Over the heights of Canossa hung a black cloud; the shadow, perhaps—but politics are out of place here.

By the morning of the 17th we reached Brindisi and lay there till noon. I spent two or three hours on shore, visited the few insignificant traces of ancient Brindusium and wandered along the ramparts to the railway station. This is no more worthy of the importance of the place than the modern town itself, which, since the opening of the Suez Canal, has risen to be the focus of the world's commerce with the East. Immediately after the arrival of the mail train at Brindisi, the overland

post-bags are transferred on board the mail-ships, and even the passengers, whether going to or returning from India, appear to feel no desire to stop in Brindisi, even for a short rest. At any rate, the only hotel is generaly empty and deserted. It was quite characteristic of the place that silence as of the grave reigned in the station, and that excepting the telegraph clerk and one porter, not a soul was to be seen at ten o'clock on a Monday morning. The flat coast near Brindisi, with its market gardens and cane plantations, and here and there a few scattered date-palms, offers little of interest. An ancient convent to the south of the town, with a tall, slender tower and a fine cupola, is the only subject for the sketch-book, forming a pretty picture, surrounded as it is with a garden run wild and a foreground of opuntias and agaves.

An English general with his family and servants, whom we were to have taken up, failed to appear, their luggage having been left behind by the railway officials; so we steamed away again without them, the same afternoon. On the following morning, in the same calm and sunny weather, we passed the Ionian Islands. I was glad to send a greeting to stately Cephalonia with its forest-crowned head, the proud Monte Nero. I had spent a never-to-be-forgotten day in April, 1877, under the guidance of the kindest of hosts, the German Consul Tool, of Argostoli—on its snowy summit, lulled by the rustling branches of the spreading *Pinus Cephalonica*, while we encamped among the huge trunks of this noble fir, which is found on this island and nowhere else. Farther on we sighted Zante, "*Fior di Levante*," and steamed so close to its picturesque southern shores that we could plainly see the long row of vaulted caves and chines in the riven red marble cliffs of its rocky coast. In the afternoon the highlands of Arcadia were visible to the left, and to the right the solitary island of Stamphania; late in the evening we passed Navarino, famous for its battle. No less lovely and picturesque were the views we had of the fine island of Candia, along whose deeply indented southern coast we were steaming almost the whole day of October 19th, still under the most beautiful lights. Thin white clouds, chased by a fresh breeze, swept across the deep blue sky, and threw fleeting shadows over the huge rocky mass of the noble island. The snow-crowned peak of Ida, the many-fabled throne of the gods, looked down on us, sometimes veiled in clouds and sometimes clear of them. After passing the two Gaudo Islands the same evening, on the following day there was only sea in sight. The proximity of the African coast made

itself felt by a considerable increase of warmth, and we exchanged the warm clothing we had hitherto worn for light summer garments.

When we came on deck on the morning of the 21st, nothing was as yet to be seen of the Egyptian coast; but the Mediterranean had already lost its incomparably pure deep-blue colour, and was faintly tinged with green. The farther we advanced the stronger did this green hue appear; by midday it passed into a dirty yellow-green, the effect of the muddy waters of the Nile. At the same time we came among a crowd of little sails belonging for the most part to Arab fishing-boats. A large sea turtle, *Chelonia caouana*, swam in front of our vessel, while numerous land birds flew on board. At noon we saw the lighthouse of Damietta; at four o'clock the Arab pilot came out to us in a small steam launch, and an hour later we were at anchor at Port Said, the northern station of the Suez Canal. As the *Helios* was to take in coals and provisions to last till Bombay was reached, it lay here a whole day. I went on shore in the evening with some of the passengers, and amused myself with watching the gay outdoor life of an Egyptian town. I met in a cafe with the doctor and some of the passengers of the *Polluce* (Austrian Lloyd's), which was to proceed to Ceylon and Calcutta direct, and which had arrived here at the same time as ourselves.

On the following morning, the 22nd, I climbed to the top of the lighthouse of Port Said. It is one of the highest in the world—160 feet high—and its electric light is visible at a distance of twenty-one nautical miles. Its strong walls are built of blocks of the same concrete as the mole of the harbour—immense cubes of artificial stone, composed of seven parts of desert sand and one part of French hydraulic lime. The view from the top did not in any respect answer my expectations, for, beyond Port Said itself and its immediate neighbourhood of flat sand, nothing is to be seen but water on every side. I next visited the magnificent artificial harbours which have been constructed at enormous cost and pains to secure the northern enttance of the Suez Canal. Not only was it necessary to dredge out the harbour basin itself to a great depth, but two colossal dams of stone run parallel far out into the sea, to defy the two arch-foes of the hardly-won possession: the muddy sediment which is carried eastward from the mouths of the Nile by the strong current from the west, and the clouds of sand which are blown into the sea by the prevailing north-west winds. The western mole is, therefore, about three thousand metres (more than a mile and three-quarters) long,

and much more strongly constructed than the eastern, which is of about half the length. Above thirty thousand blocks of concrete were used in making it, each measuring ten cubic metres (or thirteen cubic yards), and weighing twenty thousand kilogrammes (between nineteen and twenty tons).

From the harbour I walked to the Arab quarter of the town, which is divided from the European settlement at Port Said by a broad strip of desert; but both alike consist of parallel streets, regularly crossed by others at right angles. The motley and picturesque bustle of the dirty Arab quarter offers the same variety of quaint and original pictures as every other small Egyptian town, such as the suburbs of Alexandria and Cairo. The European quarter consists chiefly of rows of shops; the whole population is about ten thousand. The hopes formed at the first building of the town, that it might blossom into magnificence, have not been altogether realized; the splendid and palatial Hotel des Pays Bas, opened in 1876, is already neglected and unfrequented.

So much has already been said and written about the Suez Canal, the modern wonder of the world, that I will devote no space to repeating well-known facts, but limit myself to a few remarks on its present condition. When I was in Suez in 1873, three years after the passage had been opened, pessimist views as to its success were in the ascendant; it was believed that the cost and difficulty of keeping it open must always be greater than the probable revenue. Eight years have entirely reversed this; not only has the solvency of this great work been amply proved, but its income has reached an unexpected figure, and continues to increase steadily. The English Government, when, in 1875, to the great consternation of the French, it acquired the larger portion of the shares, did a great stroke of business, not merely from a political, but from a financial point of view. The maintenance of the Canal, however, particularly as regards the dredging which is perpetually necessary, is at all times very costly; but the increase of revenue is so steady and so large that it may be expected in a short time to yield a considerable surplus. One great obstacle to rapidity of transit lies in the fact that for most of its length the breadth of the Canal allows of only one large vessel navigating it, and that drawing not more than twenty-four to twenty-five feet of water. At intervals, however, deep bays have been constructed, where ships meeting each other find room to pass, and here one vessel has frequently to lie several hours till the other has

gone by. It is probable that in the course of the next century the Canal will either be dug out to more than twice its present width, or even be divided into two, so that two trains of ships, one proceeding northward and the other southward, may constantly pass without delay or interruption.

The whole length of the Canal is 160 kilometres, about 99 English miles; the width at the surface is from 265 to 360 feet, but at the bottom of the trench it is no more than 72 feet. The passage generally occupies from sixteen to twenty hours, but it is prolonged when several ships have to be allowed to pass at the different stations, or when a ship, as not unfrequently happens, sticks in the mud. We ourselves lost a whole day not far from Suez, because an English steamer had run aground and could not float again until she had partly unloaded. Every vessel that passes through the Canal is guided by a pilot, whose chief duty it is to see that the speed at no time exceeds five miles an hour, as otherwise the heavy wash would seriously damage the banks. As a rule, ships navigate the Canal by daylight only, or, under a full moon, during part of the night. The *Helios* had to pay about two thousand francs in tolls (£80); ten francs per ton, and twelve francs per head for passengers.

We got through the greater part of the Suez Canal in the course of the 23rd. Morning rose over Lake Menzaleh refreshingly cool and bright, and the sandbanks in the lake were crowded with pelicans, flamingoes, herons, and other water-birds. Beyond Lake Ballah we got into the narrowest part of the Canal, which is cut through El Gisr, or "the threshold." This is the highest ridge of the Isthmus of Suez, lying at an average height of fifty feet above the level of the sea. The high sand dykes on each side of the Canal are here densely covered in spots with grey-green tamarisk shrubs. Numbers of naked Arab children made their appearance, begging for bakhshish, and some of the boys played the flute and danced with a good deal of grace. About noon we passed the deserted town of Ismailia, founded by Lesseps, and in the evening cast anchor in the large Bitter Lake.

After dark the chief engineer of the *Helios* made some experiments with the electric light, which were a brilliant success. In obedience to his kind bidding, I inspected his newly constructed apparatus in the lower engine-room; its motor was worked by the steam engine that also worked the screw. I here met with a slight accident, which might have had very serious consequences. While the details of the apparatus were

being explained to me, in taking a step nearer to see it better, my right foot slipped on the smooth floor, and at the same moment my left leg, which was lifted to move, was struck just below the knee by the motor of the electric apparatus, making 1200 revolutions in a minute. I fell, and was afraid the bone must be broken; however, I happily had only received a severe contusion. But if I had fallen in the other direction, the machine must inevitably have pounded me to atoms. I immediately applied compresses with ice, and continued to do so for two days, which to a great extent averted any serious consequences; still, the limb remained much swollen for fully a fortnight, and I did not recover the use of it till shortly before we reached Bombay. Of all the imaginable perils of a voyage in the tropics such an accident as this was the last I should have thought of, and it was all the more vexatious, because it occurred just as we were entering the Red Sea, and compelled me to lie below in my cabin for several days.

The Red Sea is dreaded by all Indian voyagers as the hottest and most unpleasant part of the passage; and although we were already at the coolest season of the year, we had ample reason to be convinced of the justice of this opinion. The northern third of the Red Sea, or Arabian Gulf, lies, it is true, outside the tropic, but for all this it must be regarded throughout its whole length as a truly tropical sea. Its character is invariable from Suez to Perim, from 30° to 18° N. lat.; its flora and fauna are almost the same, and its physical peculiarities identical throughout. The difference between the two extremes of the gulf, which is three hundred miles from north to south, is far less conspicuous in every particular than that between the Red Sea at Suez and the Mediterranean at Port Said, although they are divided only by the narrow bridge of the isthmus. But this narrow bridge which joins Asia to Africa has existed for millions of years, and, as a consequence, the animal and plant life in the two neighbouring seas have developed quite independently of each other. Those of the Mediterranean have affinities with the creatures of the Atlantic; those of the Red Sea, on the other hand, belong to the Indian Ocean.*

Both the shores of the Red Sea, both the Eastern or Arabian coast and the western or Egyptian, are for by far the greater part bare of all vegetation, and everywhere desolate, parched, and barren, nor does any large river shed its waters into the gulf. Beyond the coast on each side lie

* See "Coral of the Red Sea," 1876, pp. 26, 41.

long stretches of mountains, which likewise are among the wildest and most desolate on the face of the earth; and between these high, sun-baked parallel ranges lies the narrow Arabian Gulf, like a ditch shut in between high walls, so that the intense heat which is radiated from the waterless sand-hills and cliffs gives rise to no vegetable products. In the hot summer months the thermometer in the shade at noon rises to about 50° centigrade, and the officers of the *Helios*, who had made the voyage at that season, assured me that this infernal heat had seemed so perfectly unendurable that they had feared it might affect their reason. Even now, at the end of October, it was bad enough. For the greater part of the day the thermometer on deck stood at 28° to 31° under the double awning, rising once to 40°, and in the airy (?) cabins it marked 30° to 35° night and day. At the same time the hot breeze itself was oppressively sultry, and every attempt to find refreshment was vain. To have such a draught, at any rate, as was possible, every window and port-hole was open day and night; air was conveyed from the deck to the lower part of the ship by means of chimney-like ventilators, and, finally, the Indian punkah in the saloons was kept in constant motion. This was very effectually contrived on board our ship by two rows of fan-shaped frames stretched with stuff, which swung on horizontal poles that ran along the whole length of the saloon and were moved by the engine. The air given by these huge fans, and an enormous consumption of iced water, considerably mitigated our sufferings from the tremendous heat.

Our vessel was detained for a day shortly before we reached Suez by a steamship having run aground, so it was not till noon on the 25th that we were lying in the Suez roads, and we remained but a few hours. By next morning we found ourselves opposite Tur, an interesting Arab town lying at the foot of Mount Sinai. In March, 1873, I had derived infinite enjoyment from an examination of the fine coral reef hard by. I had then been on board an Egyptian man-of-war, generously placed at my disposal for this delightful trip by the Khedive, Ismail Pasha, and I was so enchanted by the glories and wonders of this submarine coral-garden that my old longing to see the not remote splendours of India had come over me with aggravated force—"Ah! if only I could see the marvellous shores of Ceylon, surrounded with corals!" And now, eight years afterwards, here I was on my way thither!

In the bright gleam of dawn I saw the picturesque peaks of the Sinaitic peninsula glide by, which I had before seen in the purple glow of the evening sun. Of the six days of misey in the Red Sea which now

ensued there is little to be said. Our vessel kept steadily to the middle channel, so we saw very little of either coast. At seven in the evening of the 27th we crossed the tropic of Cancer, and I breathed for the first time the glowing atmosphere of tropical nature. While the starry sky bent over us in unclouded brilliancy, a heavy black storm-cloud hung over the Arabian coast to the eastward, parted every instant and almost incessantly by vivid flashes or broad pale sheets of lightning. No thunder was heard nor did any refreshing rain pass over us. The same spectacle was repeated every evening over the eastern horizon, while to the west it was perfectly clear, and day after day only light fleecy clouds ever floated across the deep blue sky. During the first three nights in the tropics the thermometer never fell below 32° centigrade in the saloons or cabins, while all stood open. I and most of the other gentlemen slept on deck, where the temperature was at least four degrees lower and we also had a breath of air. We passed the Straits of Bab-el-Mandeb in the night of October 30th, and the island of Perim, fortified by the English—the Gibraltar of the Red Sea. By ten in the morning of the 31st we had cast anchor in the Gulf of Aden.

Aden, as everybody knows, is built on a rocky peninsula, connected with the mainland of Arabia by a narrow isthmus, just like Gibraltar. It was taken and fortified by the English so long ago as 1839, and of late years this great emporium on the route to India has grown to immense importance, particularly since the opening of the Canal. The population already numbers more than thirty thousand. Most ships stop here to take in coal and victuals; we were already provided at Port Said, for we did not know whether communication with Aden was considered safe, an epidemic of cholera having broken out there about two months since. We were told, however, that all danger was now over. No sooner had we arrived than the *Helios* was surrounded by Arab boats, whose dark-brown passengers clambered on board to offer the produce of the country for sale—ostrich feathers and eggs, lion and leopard skins, antelope horns, huge saws from the sawfish, prettily woven baskets, bowls, and so forth. But the sellers were far more interesting than their merchandise: some of them genuine Arabs, some negroes, some Somalis and Abyssinians. Most were dark brown in colour, verging in some on copper-colour or bronze, and in others nearly black. Their black curly hair was in many cases stained red with henna or white-washed with chalk. The garments of most consisted merely of a white cloth round the loins. Most amusing, too, were the swarms of little brownish-black boys

from eight to twelve years old, who came out singly or in pairs in little canoes formed of a tree-trunk burnt hollow, and displayed their diving powers. We threw small silver coins overboard, which they dived for and caught with amazing skill, and struggled under water for them with the greatest energy.

As we did not land we saw but little of the town and fortifications. The barren volcanic rock on which the houses are scattered seemed to be deeply riven, and in some places highly picturesque; the prevailing colour of the bare lava is dark brown. No form of vegetation clothes its stark and naked sides to qualify the heat of the tropical sun, though here and there isolated and meagre plantations were to be seen. A residence in this scorching rock-settlement during the summer is the purgatory of the English garrison, and it is not without reason that the officers call it the "Devil's Punch bowl." The aspect of the naked lava cliffs reminded me forcibly of Lancerote in the Canary Islands.

After a stay of six hours the *Helios* quitted inhospitable Aden to proceed on her way to Bombay. The eight days' passage across the Indian Ocean again offered no incident worthy of record. We all rejoiced in the exquisite autumn weather; the refreshing north-west monsoon told upon us more and more every day. We perceived its influence with keen satisfaction as soon as we were out of the Red Sea. Although, even now, the thermometer never fell below 25° centigrade, and generally stood at 28° at noon, the fresh breeze felt like a different atmosphere, and, above all, the nights were no longer sultry, as in the Red Sea, but deliciously cool. The sea was in constant motion under the fresh breath of the monsoon; its colour was a delicate blue-green, or sometimes a greenish lapis-lazuli, but never the pure deep blue of the Mediterranean: in the Red Sea the blue had verged on violet. The sky was sometimes quite clear, sometimes dappled with light clouds. At noon numerous masses of clouds invariably gathered and packed, towering above each other, and riding from the north-east towards the south-west. The Indian sunset afforded the most gorgeous effects of light, an ever new and ever splendid spectacle, vanishing only too quickly before our eyes. For hours together I could stand forward by the bowsprit and watch the shoals of flying fish which constantly fluttered up close to the ship and shot across just above the water, like swallows.

Still, nothing could prove so strongly attractive as my beloved Medusae, which appeared in the mornings between nine and twelve

at first singly and then in swarms: blue *Rhizostoma*, rose-coloured *Aurelia*, and reddish-brown *Pelagia*. I regretted extremely being unable to fish up and examine the remarkable social Medusae or Siphonophorae, called *Porpita*, and of which numerous fine specimens were seen, though always singly, on November 4.

On some evenings the beautiful phenomenon of a phosphorescent sea was finer than I ever had seen it. The whole ocean, as far as the eye could reach, was one continuous and sparkling sea of light. A microscopical investigation of the water in a bucket showed that the greater number of the phosphorescent creatures were minute crustaceans, and the rest were Medusae, Salpae, Annelidae, etc., but the brightest light proceeded from the *Pyrosoma*. I spent the greater part of three weeks of enforced idleness in writing this account of them.

CHAPTER II

A WEEK IN BOMBAY

NOVEMBER 8th, 1881, was the glorious and memorable day in my life when I first set foot in a tropical land, admired tropical vegetation, and gazed in astonishment at tropical life in man and beast. Exactly a month before, on the 8th of October, I had left my home in Jena, and here I was already brought by the Austrian Lloyd's steamship *Helios* across thirty-four degrees of latitude—four thousand miles away from my German home—standing on the wonder-teeming soil of India. By an hour before sunrise I was already on deck, and saw the deeply indented coast of Bombay grow gradually out of the filmy mist of dawn, with the weirdly shaped outline of the hills known as the Bhor Ghauts. These form a boundary wall between the broad tableland of the Dekhan—the highlands of the peninsula of Hindostan, lying at about two thousand feet above the sea—and the narrow flat strip of the coast of Konkan, the littoral lowland. The steep rocky walls which stretch away in a long chain, consist of basalt, syenite, and other plutonic rocks, so that the horizontal line of the high plateau appears to be guarded by a number of colossal fastnesses, forts, towers, and battlements.

The twilight eastern sky over the Indian shore was swiftly dyed with the most delicate and tender hues, and then, suddenly, the Indian Helios appeared in all his splendour, sending his burning shafts from between two broad strata of clouds to greet the vessel that bore his name. We could now distinguish the details of the coast we were approaching; first, the extensive groves of the Palmyra palm, and then the vast harbour

of Bombay, affording shelter to thousands of ships. Of the town itself, the detached houses of the Kolaba quarter were now visible on the projecting south-eastern point of the island of Bombay; presently we saw the noble buildings of the fort in front, and in the background the long green ridge of the Malabar Hill, forming the south-western rampart of the island, and covered with villas and gardens. But, more than these, what riveted our eyes was the strange concourse of ships in the wide harbour, which is one of the best in India. Here, close before us, lay the two iron-clad monitors, painted white, which very effectually complete the fortifications of the place; there, hundreds of English soldiers were standing on the decks of two gigantic troop-ships carrying from three to four thousand men. As we went on we passed through a whole fleet of different steamships, which convey passengers and freight from Bombay to every country under heaven; and strangest of all was the motley swarm of small boats and canoes manned by the natives, whose bare brown bodies are generally clothed only with a white apron or loin-cloth, and their heads protected against the tropical sun by a coloured turban.

Soon after sunrise our ship was at anchor close to the Apollo Bund, the usual landing-place for passengers; officers of health and custom-house men came on board, and as soon as they learnt that all the passengers had never left their floating hotel for twenty-four days since leaving Trieste, we were free to land. A few last friendly greetings were hastily exchanged, address-cards and good wishes for the rest of the journey, and then each one went down the ship's side as fast as possible with his belongings, and into a boat that was to convey him to the longed-for land. I myself accepted the kind invitation of a worthy fellow-countryman, Herr Blaschek, of Frankfort-on-the-Maine, who came on board to meet his wife, our amiable travelling companion. He begged me, for the week I was to spend in Bombay, to stay at his villa on Malabar Hill, and I accepted the invitation all the more readily because the English hotels in the great Indian cities, with their inconvenient hours, their stiff etiquette, and their swarms of tiresome servants, hamper the movements of travellers in a very disagreeable manner.

Although in the Villa Blaschek, among palms and bananas, I was surrounded by the elaborate comforts which are a matter of course to all wealthy Europeans residing in India—though to a German stranger they seem almost too luxurious—I at once felt myself perfectly at home; and I owe my delightful recollections of this week in Bombay as among

the pleasantest in all my travels, at least as much to this hearty and liberal hospitality as to the endless succession of wonderfully various and beautiful scenes which, during these eight days, passed before my eyes.

A week, of course, cannot in the remotest degree suffice to make the traveller fully acquainted with such a city of wonders as Bombay, and I do not in the least pretend in these pages to give a complete description of it, nor even a general sketch; I must, on the contrary, confine myself to a meagre outline of the deep and grandiose impressions made on my mind during my brief visit. I had heard and read but little of Bombay; I knew scarcely anything about it beyond the fact that, next to Calcutta, it was the largest and most important city of British India, with an extensive commerce by land and sea, and a very mixed population. Nor do I remember ever having seen any views of this city, or of its suburbs, in our picture exhibitions. I was therefore greatly surprised to find here a wealth of beautiful and magnificent views which, so far as my own experience serves, I can only compare with those of Naples in Europe, or of Cairo in Egypt, or, better still, a singular combination of both those famous capitals, dissimilar as they are. Bombay may be compared to Naples in regard to its magnificent situation on a deeply indented and hilly coast, beautified by a glorious vegetation, and its chain of islands and rocks enclosing the wide and splendid bay; on the other hand, Bombay resembles Cairo in the motley aspect and picturesque figures of its inhabitants—a mixture of all the most dissimilar races of the south—in the amazing crowd and bustle of its street-life, and the vivid colouring in which nature and art alike clothe their creations.

The town of Bombay covers a little island of twenty-two square miles (English) in extent; it is in 18° 56′ N. lat. and 72° 56′ E. long. The island was first discovered by the Portuguese in 1529; they took possession of it and named it Buona Bahia (Bonne-bay), on account of the fine harbour formed by its connection with other neighbouring islands and the coast of the mainland of India. Some writers, it must be added, derive the name of Bombay from the Indian goddess Bambe-Devi, or Maha Devi. In 1661 the Portuguese ceded Bombay to the English, who at first, however, did not make much of it; extensive swamps and the consequent unhealthy climate were a serious hindrance to any extensive settlement. As soon as these swamps were drained and the conditions of life improved, Bombay developed rapidly—chiefly since 1820, when the illustrious Mount-Stuart Elphinstone was appointed governor; and during the past half-century it has grown to be the third commercial

city of Asia, next only to Canton and Calcutta. The population now amounts to about 800,000, including 8000 Europeans and 50,000 Parsis; whereas in 1834 there were but 234,000 inhabitants, in 1816 160,000 and in 1716 only 60,000. With respect to the commerce and traffic generally of the Indian Peninsula and the intercourse between Asia and Europe, Bombay now holds a position as important as that of Alexandria at the time of its ancient prosperity. The most important staple of its trade is cotton; in this commodity it is surpassed only by New Orleans, U.S. The extensive harbour, which is as safe as it is spacious, is the finest trading port in all India. It is open to the south, and protected on the north-east by the mainland, on the west by the island of Bombay, and to the north by a group of small islands lying in close contiguity.

The shape of the island is a long square, its greatest length lying north and south. The northern end is connected by several bridges with the large island of Salsette, and this again with the mainland. A large part of the northern half of the island is occupied by the palm-wood of Mahim. The southern end runs out into two long hilly points which have been compared to the unequal claws of a crab's nippe s, and which enclose a finely curved but shallow bay—Back Bay, as it is called. Of these parallel promontories or tongues of land the western is the shorter and higher, a good deal like Posilippo. This is the Malabar Hill, the beautiful suburb of villas. Here delici us gardens, luxuriantly full of all the glorious plants of the tropics, enclose the numerous elegant villas or bungalows in which the richest and most important re idents live—some Europeans and some Parsis. A pretty road, leading between these gardens along and up the highest ridge of the basalt back-bone of Malabar Hill, affords a series of magnificent views—now to the west over the palm-crowned shores of the open ocean, and now to the east over the wide stretch of Back Bay and the noble city which is built round it. The most southerly extension is towards the point of Kolaba, which is the eastern and longer cape of the two. This is the chief scene of the cotton-trade, and principally occupied by tents and barracks for European troops.

At the north end of Kolaba Point, between it and the contiguous Fort, lies the much-talked-of Apollo Bund, the handsome quay where most passengers disembark, and where I myself first trod Indian soil. This busy landing-place is not named after the splendid Sun-god, but from a corruption of the Indian word *Pallow*, fish, into Apollo. The *Pallowbund* was originally the Indian fish-market. Here there is now an

excellent restaurant, the only large or elegant place of the kind in all Bombay; and out on the balcony, which has a glorious view over the harbour and hills, I eat my first breakfast in India, at the invitation of a friendly fellow-countryman. The open square of the Apollo Bund, like Santa Lucia at Naples, offers the most exciting and busy scenes in the evening. Military bands often play, and all the beauty and fashion of Bombay meet here. Numbers of fine carriages are to be seen, in the cooler hours, returning along the strand by Back Bay to Malabar Hill, and on the open grass-plots the busy doings of the natives are to be seen, who after their fashion enjoy life here too, squatting round fires and gambling.

The wide expanse of the southern half of the island between Malabar Hill and Kolaba Point is occupied by the two most important quarters of the town, the Fort and the Native Town. The Fort, as it is called, was formerly an isolated citadel; it lies at the north end of Kolaba, and includes by far the larger part of the European settlement. Here we find, in the first place, most of the public buildings, erected on spacious squares ornamented with fountains, and, in the second place, most of the counting-houses and offices of the Europeans, all close together; these constitute the "city" properly speaking—a scene of eager bustle. Most of the great public buildings—the government offices, post-office, university, schools of art, bank, town hall, etc., have been erected at a great expense within the last twenty to thirty years. They are all fine structures in the Gothic style, with pointed arches and colonnades; most of them in the peculiar style which is seen in many old palaces in Venice. These grand Veneto-Gothic buildings form a strange contrast with the luxuriant tropical vegetation which surrounds them and the motley Indian low life which surges in the streets at their feet.

The chief centre, however, of this national life lies in the Native Town, as it is called. This is perfectly distinct both from the Fort which lies to the south of it, and from Malabar Hill to the west, and its vividly coloured and strangely foreign population is to every European highly attractive and interesting. The open booths of the natives, which stand in close rows, the gay-coloured clothes or the half-naked figures of the struggling crowd, the cries of the sellers, the turmoil of vehicles and horses, is very much the same as in the bazaars and shop-streets of Cairo.

But the longer the stranger lingers in the busy city the more he is struck by certain characteristic differences between the Indian and

Egyptian capitals. For instance, the north-west quarter of the Native Town, called Girgaum, has a very distinct and far more beautiful aspect. Here are small detached native houses and gardens scattered through a noble forest of cocoa-nut palms, and all the accessories—naked children, gaudily dressed women, and swarthy men, with graceful zebus, horses, dogs, monkeys, etc., in gay confusion—supply an endless choice of subjects for the *genre* painter.

The population inhabiting these different quarters of Bombay is composed of such heterogeneous elements, and wears such a variety of costume, that it would far transcend the powers of my pen to attempt even to sketch its multifarious manners and customs. The largest proportion is of Hindoos, a small and delicate race, with a dark bronze skin in some cases verging on coffee colour and in others on chestnut brown. The children of these natives are charming; they run and play about the streets perfectly naked, never wearing any clothes before their ninth year. The men too, indeed, of the poorest class are generally almost naked, wearing only a loin-cloth or apron like swimming drawers; thus the painter can study their graceful forms and curiously slender limbs at every step and turn, and in every conceivable attitude. Among the lads of from sixteen to twenty he will meet with beautiful models. In fact, they here constitute the fair, or rather the handsome sex; their features at that age are often finely moulded and noble, and distinguished by a certain cast of melancholy. Among the women, too, slender and graceful figures are to be seen, and the simple drapery in which they robe themselves is generally worn with much grace; but pretty faces are rare. Most of the girls marry very early, at from ten to sixteen, soon lose their bloom, and in old age are exceptionally hideous. Added to this, they practise the disfiguring custom of wearing a large silver ring through the left nostril, with stones, glass beads, and other decorations attached; this appendage, in many cases, covers a large part of the mouth and chin. Their lips are also stained with chewing betel, which gives them and the teeth a bright reddish-yellow colour. The foreheads, too, of men and women are painted with streaks and patterns of various hues, the sign of their caste; their arms are tattooed with blue, and both sexes wear silver rings on their toes, and silver anklets. Thus the naked figures of the Hindoos give a strange and strong impression of their being real savages, though, in point of fact, they are descended from the same "Mediterranean," or Aryan stock, as the various races of Europe. The institution of caste and the Brahminical religion are preserved among

them very generally, to the present day. They burn their dead, and driving in the evening along the beautiful strand of Back Bay from the Fort to Malabar Hill, close to the railway station, we see the fires in the huge furnaces where Hindoo corpses are consumed on gratings, in a far simpler, cheaper, and more effectual manner than the new and costly process of cremation introduced into Gotha.

According to the census of 1872, the whole population of Bombay amounted at that time to 650,000 souls, of which more than three-fifths were genuine Hindoos of various castes, all under the spiritual control of the Brahmins, while 140,000—about a quarter of the whole—were Mohammedans, and only 15,000—scarcely one forty-fifth part—were Buddhists. Then there were a few thousand Jews, Chinese, and negroes, and a large hybrid population of various mixed races. It may be fancied therefore, how miscellaneous the crowd appears which fills the streets of Bombay, and what a variety of types, customs, opinions, and traditions come into constant and peaceable contact. Perhaps there is no city in the world where a greater confusion of many tongues is spoken than in Bombay, particularly as in the European colony every Western language has its representatives.

One of the most remarkable and important elements of the population is afforded in Bombay, as in the other great towns of India, by the Parsis and Guebres. Their number amounts only to about 50,000—not more than a twelfth of the whole population—but their indefatigable energy, prudence, and industry have gained them so much influence that they play an important part in every respect. If, as is often done, we classify the Europeans in Bombay in one class, in contradistinction to all the other subdivisions of the mixed indigenous or native inhabitants, we find that the Parsis constitute a third important class, standing as it were, between the other two. They are descended from those ancient Persians who, after the conquest of Persia by the Mohammedans in the seventh century, would not accept the new religion, but clung to that of Zoroaster. Being in consequence driven out of their own country they first retreated to Ormuz, and thence dispersed over India. They marry only among themselves, keeping the race unmixed, and, irrsepective of their peculiar costume, are recognizable at a glance among all the other races. The men are tall and stalwart figures with yellow-olive faces, generally somewhat heavily built, and far finer and stronger men than the feeble Hindoos. They dress in long full white cotton shirts and trousers, and wear on their heads a high black cap or tiara, something

like a bishop's mitre. Their expressive faces and, not unusually, fine aquiline noses reveal energy and prudence; and at the same time the Parsis are saving and frugal, and, like the Jews among us, have managed to absorb large sums into their own hands. Many of the richest merchants of Bombay are Parsis, and they are also capital hotel-keepers, ship-builders, engineers, and artisans. Their domestic life and virtues are highly spoken of. The Parsi women are generally tall and dignified, their expression discreet and resolute; their colour yellowish, with the blackest hair and eyes. Their dress consists of a long gown of some simple but bright colour—green, red, or yellow. The children of wealthy Parsis are often to be seen out walking in dresses embroidered with gold or silver. Many of them live in handsome villas, like to have beautiful gardens, and by their easy circumstances excite the envy of the Europeans. At the same time, the rich Parsis are often distinguished by their noble public spirit, and many have founded useful and benevolent institutions. Some have been raised by the English Government to the dignity of baronets, in recognition of their distinguished merits.

Another circumstance which has undoubtedly contributed in no small degree to the remarkable energy and success of the Parsis is that they have remained, to a great extent, free from the dominion of the priesthood. Their religion—the doctrine of Zoroaster—is in its purest form one of the loftiest of natural religions, and founded on the worship of the creative and preserving elements. Among these the first place must be given to the light and heat of the procreative Sun and its emblem on earth, Fire. Hence, as the sun rises and sets, we see numbers of pious Parsis on the strand at Bombay, standing, or kneeling on spread-out rugs, and attesting their adoration of the coming or departing day-star by prayer. I have never looked on at the religious exercises of any nation with deeper sympathy than at those of these sun and fire worshippers. For we, the students of nature, who duly recognize the light and warmth of the sun as the source and origin of all the glorious organic life on our globe, are also, in point of fact, nothing else than sun-worshippers!

The religious ceremonies of the Parsis are, indeed, extremely simple and in some measure based—like those of the Moslems—on sound sanitary principles, as, particularly, their dietetic rules and numerous daily ablutions. Their stalwart bodies enjoy, in consequence, excellent health as a rule, and their bright and eager children make a much more pleasing impression than the pale-faced, languid European children who fade into debility in the overpowering heat.

The funeral ceremonies of the Parsis are a most remarkable usage. High upon the ridge of the Malabar Hill—indeed, on one of the highest and finest peaks, where a splendid panorama of Bombay lies at the feet of the admiring spectator, like the Bay of Naples from the summit of Posilippo—the Parsi community possess a beautiful garden full of palms and flowers. In this cemetery stand the six Dokhmas, or Towers of Silence. They are cylindrical white towers, from thirty to forty feet in diameter and about the same height. The inside is divided like an amphitheatre, into three concentric circles, sub-divided by radiating walls into a number of open chambers. Each of these divisions holds a body, those of children in the centre, those of women in the second circle, and men in the outer one. As soon as the white-robed servants of the dead have received the corpse which the relatives have escorted to the cemetery, they carry it, accompanied by chanting priests, and place it in one of the open graves, where they leave it. Flocks of the sacred bird of Ormuz—the fine brown vulture—at once come down from where they have been sitting on the neighbouring Palmyra palms. They fling themselves on the body inside the roofless tower, and in a few minutes the whole of the flesh is devoured. Numbers of black ravens finish off the slender remains of their meal. The bones are afterwards collected in the centre of the tower.

To most Europeans this mode of disposing of a corpse is simply horrible, just as in the classical times it was regarded as a peculiar mark of scorn to throw out a body to be food for the vultures. But to the student of comparative zoology it seems that it may, perhaps, be more aesthetic and poetical to see the remains of one we have loved destroyed in a few minutes by the powerful beaks of birds of prey, or, like the Hindoos, to know that it is burnt to ashes, than to think of it as undergoing that slow and loathsome process of decomposition into "food for the worms" which is inevitable under the present conditions of European culture, and which is as revolting to feeling as it is injurious to health—being, in fact, the source of much disease. However, what is there that dear habit will not do, and that mighty lever Propriety?

It was a never-to-be-forgotten evening when, on the 14th of November, I, with my fellow-passengers from the *Helios*, Frau Blaschek and Count Hunyadi, went up to the Towers of Silence. The sinking sun was just painting the western horizon with the gorgeous and too transient hues of a tropical sunset, which no brush nor pen can represent or describe. Opposite, in the east, huge masses of clouds were piled in the

mysterious purple light, each edged with gold, and lower down, in a violet glow, rose the singular crests and towers of the Bhor Ghauts,—the ramparts of the tableland of the Dekhan. At our feet the unruffled waters of Back Bay mirrored the flaming glory of the sky, and beyond stood the noble buildings of the fort, overtopped by the forest of masts in the harbour. To our right the eye was led along the villas and gardens of Malabar to the farthest spit—the projecting rock of Malabar Point, where Lord Elphinstone once lived in his simple lonely villa, and where the Governor's summer residence now stands. To the left, under the dense shade of the cocoa-nut trees of Girgaum, the busy life of the Native Town lay hidden. And as a foreground to all this, the Towers of Silence, surrounded by tall fan palms—on their heads the satiated vultures, settled to their evening repose; at their feet the white-robed Parsi priests. It was a picture worthy of a great painter.

Very different from the deep and mournful mood roused by this evening scene was the impression I received next morning in gazing from the neighbouring Belvedere on Kumbala Hill. I was on my way thither an hour before sunrise, alone in the still morning twilight; passing the Towers of Silence, a quarter of an hour more brought me to that highest northern peak of Malabar Hill on which the "flagstaff" is planted. This is the name given to the watch-tower of the signal-man who looks out into the distance from this highest point of all, to give notice of the arrival of big steamships, and whose duty it is to announce the mail steamer by firing two shots from a cannon. The steep rocky slope is here overgrown in places with a thorny brake, and in some spots there are groups of date palms under which nestle native huts. In the immediate vicinity, and in a lovely situation, equally high up, is the residence of the German consul, who was at this time in Europe. From this point the eye not only surveys the whole city and bay, but, glancing northwards, can take in the great palm-grove of Mahim, at the northern end of the island of Bombay, the larger island of Salsette, and the mainland beyond. A tender grey haze veiled this splendid panorama when I reached the summit shortly before sunrise, but scarcely had the sun mounted above the battlemented rocks of the Bhor Ghauts, when the mist rolled off and by degrees the beautiful picture grew clear before my eyes.

An excursion to the palm-grove just named, which I made on the 13th in company with Blaschek, is one of my pleasantest memories of Bombay. It was a glorious Sunday morning, my first Sunday in India,

and I shall never forget all the sensations of that day. In the tropics you must start before the sun is up if you wish really to enjoy the freshness of the morning, and the first rays of the sun on that lovely and cloudless Sunday found us sitting in a light carriage among the stems of giant and primaeval banyan trees on the northern side of Kumbala Hill. The Indian huts under the shadow of these huge figs, often hidden among their aerial roots and supported by the trunks formed by these roots, were the stage for numerous quaint domestic scenes, such as must delight the European novice. Whole families were sitting by the wayside in the costume of Paradise, giving their brown skins an extra polish by rubbing in cocoa-nut oil, and at the same time affectionate relatives, parents and children, reciprocated kind and necessary attention to each other's long black hair; though, as the Hindoo may never take life, they carefully released the prisoners they took. Others adopted a more effectual remedy, having their heads entirely shaved. Many were bathing in the tanks by the roadside, and others, before putting on their white loin-cloths, stretched themselves comfortably either under or among the shady branches.

The cocoa-nut grove of Mahim—the first I had ever seen—offered a yet further variety of pictures. Toddy-gatherers climbed the immensely tall trunks with the agility of apes, to collect the palm-sap which had trickled during the night into jars hung to receive it; they scrambled most nimbly from one tree-top to another, along ropes which had been stretched across from trunk to trunk. Others were gathering the fruit of the noble banana (or plantain) trees, while others, again, were busy preparing breakfast. I could never tire of admiring the magnificent effects of light produced by the play of the sunbeams on the broad quivering feathery leaves of the fine cocoa-nut palms, and on their white gracefully bent trunks, as well as on the tender pale green leaves of enormous size of the bananas at their feet. And besides all this there was an abundance of beautiful flowers, and butterflies sporting and vying with each other in size, brilliant colouring, strange forms, and aromatic smell! Here and there stood a waving clump of the elegant bamboo, and strewed in every direction were little huts built and roofed with this cane. The roads were full of domestic animals, pigs and dogs, fowls and ducks; and among them all, dancing and playing, were the delightful, naked Hindoo children with their big black eyes.

After we had wandered about for more than an hour in the winding cross-roads of the wood of Mahim, we tried to make our way to the left,

down to the sea-shore, which was not far off; but the narrow path between two walls brought us out at a huge puddle. A two-wheeled bullock-cart came towards us from the other side in the very nick of time; we scrambled into the vehicle, which was clean, in the merriest mood, and made the Hindoo lad who drove it carry us across through the puddle, though, as it was, we nearly stuck in the deep mud at the bottom. Once safely over, we soon reached the sandy shore, which is here planted for a long distance with a beautiful wood of cocoa-nut. We came upon fine groups of the curious *Pandanus*, known as the screw-pine, whose twisted stem forks into two candelabrum-like branches, each bearing a large tuft of leaves like an agave growing in a spiral, while the main trunk stands perched above the soil on aerial roots, as if it were on stilts. Between the branches hung enormous spider's nets, the home of a finely marked and gigantic spider, with a thick body 2½ inches long, and thin legs of nearly 4 inches in length. The monstrous beast was not difficult to catch, and found his last home in my spirit phial. The firm threads of its net, which was more than a yard across, astonished us by their strength, which was almost like that of linen thread. While we, below were busy with this exciting spider-hunt, a shrieking flock of green parrots rose from among the palm leaves overhead—the first I had ever seen wild.

A number of zoological surprises were awaiting me on the sandy shore of Mahim, which happened to be laid bare for a wide space by a very low tide. Enormous specimens lay stranded of a splendid blue Medusa—a species of *Crambessa*—more than a foot across, and there was a curious sea-urchin—*Diodon*—with a thorny coat and its laryngeal-sack blown out to a large size. In the sand itself I found a great number of various bivalves and univalves, of characteristic Indian forms which I had hitherto met with only in museums: large *Serpulae*, numerous crustacea, notably the swift-footed sand-crabs that make pits in the sand and many fragments of the skeletons of fish mixed with skulls and other portions of human skeletons. These were the remains of Hindoos of the lowest class, who are not burnt, but simply buried on the sandy shore. My wallet was quite filled with zoological treasures when, towards noon, we turned our steps homewards.

To me one of the most interesting features of Bombay was the sacred Brahmin settlement of Valukeshwar, at a few minutes' distance only from my hospitable friend's bungalow, between it and Government House on Malabar Point. I paid several visits to this remarkable

village, and at all hours of the day, and was always struck by the various and original pictures it afforded of Hindoo life among the highest caste; for none but true Brahmins reside in this sacred spot, and no unclean Hindoo of lower caste dares to defile it by his presence. A square tank constitutes the focus and centre of this, as of many similar sacred places scattered about the Native Town. There are flights of steps down to the water on all four sides, and it is surrounded by a number of little temples and shrines, between which the tank is approached by narrow alleys. The temples are distinguished by characteristic white towers, some in the form of a bishop's mitre, others like thick and stumpy obelisks. The interior of the temples, which, like the houses scattered between them, stand open to the street, is simply a hall or room, and in the midst of it, or in a sort of forecourt under a colonnade, lies a sacred bull. Other objects of worship are there, decked, like the bull, with flowers, chiefly emblems of fertility carved in stone and at once obscene and grotesque. These are also to be seen in many places by the wayside both within and without the town, and painted red. They are an object of worship more especially to childless couples, and the reddened portions are stuck all over with scraps of gold paper and wreathed with flowers in the hope of winning the blessing of children by such votive offerings.

In front of the temple-steps and on those of the sacred tank, pious penitents squat or pray with the most extraordinary and various gestures and devotional exercises. Most of these Fakirs are accomplished hypocrites, who give themselves up to a *dolce far niente* at the expense of their pious and benevolent fellow-believers. Their naked bodies are smeared with oil and ashes, their long hair matted in unkempt knots which never being cleaned, exhibit a peculiar form of *Plica polonica*, and are always a crowded zoological preserve. The sole virtue of most of these Fakirs consists in the mutilation of some limb. One has held his fist convulsively clenched for a number of years, so that his nails have grown deep into the palm of his hand; another has held his arm stretched out straight up from the shoulder so long, that it has lost all sensation and power of motion, and sticks up withered and atrophied like a dry branch; a third has cut himself in a number of places, and by rubbing in ashes has kept the wounds open and disfigured his body and face in the most hideous manner. It is a well-known fact that there is no madness nor perversity too great to result from religious fanaticism, particularly when it goes hand in hand with the universal mendacity of priestcraft

still, few forms of religion, probably, engender such monstrous births of this class as the Brahminical.

While I spent many hours in the Brahmin village of Valukeshwar on the margin of the tank under the shade of a sacred banyan tree, in order to record these strange scenes in my sketch-book, I had ample leisure to study the strange life and manners of this privileged caste of idlers. The principal occupation of these high-class Brahmins, who live like regular mendicant friars upon the lavish offerings of the superstitious and devout Hindoos of lower caste, is simply doing nothing, a philosophical contemplation of the world and its follies; this is occasionally interrupted by some outward formalities of religion, of which frequent ablutions are certainly the most to the purpose. The sacred tank is almost incessantly occupied by bathers of both sexes. I had great sport with the merry children, absolutely superior to any kind of clothing, who came in crowds to gaze at my water-colour drawing, and made eager comments upon it. They appeared to be particularly delighted at a caricature of a howling and perfectly mad Fakir in the tank, for the Hindoo youth in general do not seem to have caught the orthodoxy of their elders.

A Brahmin school at Valukeshwar afforded many interesting pictures; the grey-haired old schoolmaster seemed disposed to look on the bright side of this weary life, and was evidently delighted when I introduced myself by signs as one of his own profession. Hard by this temple of wisdom I had an opportunity of seeing something of the medical practice of the Hindoos: an *accouchement* of peculiar difficulty was proceeding in the open street, assisted by the most extraordinary instruments; a Hindoo constable or policeman kept the assembled multitude in order, and was good enough to explain the transaction to me. Not far off another Hindoo doctor was exorcising the devil from a poor wretch crippled with rheumatism, by a process of kneading and squeezing. In these branches of the profession, and particularly in torturing animals, the pious Hindoos are indeed adepts, while they take the greatest care never actually to kill any living thing, not even the smallest or most noxious insect.

On the very first day of my arrival in Bombay I had an opportunity of joining in an excursion to the famous island of Elephanta, where the most perfect and most highly decorated of all the many cave-temples of India are to be seen. As this temple of the Brahmins has been made

familiar to all by pictures and descriptions without number, I will content myself with confessing that it disappointed my excited expectations; I had fancied the general impression would be far more grandiose and imposing. What we regard as beauty is, in the first place, quite out of the question in the extravagant arabesque sculpture of the Hindoos; the repulsive and monstrous combinations of human and unusual forms, the divinities with three heads—*Trimurti*—the distorted apish faces, the bodies with a multiplicity of breasts, arms, legs, etc., were to me simply disgusting, and I am one of the small number of heretics who think that our great master Goethe's judgment was sound as to the "disjointed elephants and grotesque temples." At the same time, the rock-temples of Elephanta are extremely remarkable, both for the finished workmanship of the details, and for the way in which the whole temple, with its three pillared halls and numberless figures, has been cut out of the living rock—a black and very hard trap-rock. The position, too, of the temple on the steep western slope of the verdurous island is splendid, and the view over the bay of Bombay so extensive that an excursion thither well repays the trouble.

We made it in a steam launch, starting from the Apollo Bund. The passage takes only an hour, and gives a delightful succession of views of the harbour; I here saw quite close to me Indian ships and boats of every size and shape. The view of the high tableland, the Bhor Ghauts of the Dekhan, is very fine too, as well as the lowland of Konkan at its foot, with its crowds of palms, between which and the island of Bombay lies the little isle of Elephanta. The larger island of Bombay is conspicuous by the gorgeous red colour of its bare cliffs.

In another way, too, my excursion to Elephanta proved to me of the greatest interest, a day never to be forgotten. For it was on this 9th of November that I first saw the marvels of the tropical flora in its free and unfettered glory. I had, to be sure, on the previous afternoon taken advantage of my first hours in India to go by the tramway northwards through the Native Town to the Victoria Gardens. This is a very pretty but not very carefully kept botanical garden. It cannot certainly compare with other botanical gardens in India; however, I saw there for the first time a great number of the handsomest and largest growths of the tropics, especially the typical forms of the Indian palms and bamboos, banana and Pandanus, bread-fruit and Papaya, lotos and *Pistia*, etc. But enchanted as I had been in the lovely Victoria Gardens on my first evening in Bombay, glorified as it was, too, by the gorgeous colouring

of a splendid sunset, my delight was immeasurably greater when, the next day, I saw at Elephanta all the most characteristic plants of India growing wild under natural conditions, and in that free and unchecked luxuriance which will endure no gardener's hand.

Here, wreathing creepers and climbing ferns cling to the trunks of the gigantic teak trees; there, tall cocoa-nut palms bend their slender stems and grand crowns of shining plumes over the seashore, which is fringed with clumps of *Pandanus*, and held up by a wall of mangrove with its roots in the water. Enormous parasitic figs, convolvulus, and other creeping plants, covered with large and gaudy flowers, climb to the very top of the perpendicular trunks of the tall Palmyra palms, and even their proud heads of many-fingered leaves are garlanded with blossoms. Here, too, are huge primaeval specimens of the banyan, the sacred Indian fig. The colossal main trunk diverges below into a regular net-work of thick roots, while from the dense dark greenery above the branches send down a tangle of aerial roots; many of these reach the ground and, taking hold on the soil, form new props to support the parent roof of leaves. Out there, see—a stalwart parasite of the fig family is choking the noble palm it holds in the tight embrace of its twining stems, and a few paces farther stands another, its very brother, now a mere cylindrical trellis of plaited stems bare of leaves; the throttled palm first died and decayed, and now the same fate has overtaken its murderer. Among the palm-trunks the graceful bamboo reeds grow in huge tufts, beautiful broad-leaved bananas and Strelitzias unroll their bright green foliage, large gaudy flowers open their perfumed cups, the delicate feathery acacia casts a broad protecting shade, and cactus-like Euphorbias form dense and thorny thickets.

Thus, here in Elephanta, I saw, for the first time in living actuality, a quantity of the most curious and lovely forms of that tropical vegetation of which I had read and dreamed for thirty years. Amid them thousands of most gorgeous butterflies fluttered in the sunny air, brilliant gold beetles whizzed through the shrubbery, hundreds of startled lizards and snakes hurried off into the undergrowth, noisy flocks of gaily painted birds flew from tree to tree—all creatures that I had never seen alive before, though for the most part old acquaintances. I rushed like a child to seize all these new wonders, and could not help touching the palm-trunks and bamboos to assure myself that it was not a fairy vision.

And I went home, dream-possessed, in the exquisite evening glow, from Elephanta to Bombay, and through a sleepless night, my first in India, saw again in my "mind's eye" thousands of dazzling pictures.

Unfortunately one short swift week in Bombay allowed time for no more than a single excursion of any length towards the interior of the Indian continent. It was, however, a very interesting one, and gave me a very good idea of the character of the plateau of the Dekhan. By the kind advice of a friendly fellow-countryman, Herr Tintner—whom I take this opportunity of thanking heartily for many good offices—I chose, from among a variety of expeditions feasible within the space of two days, that to Lanaulie and the rock-temples of Carli. I started from Bombay at noon on the 11th, in the company of Count Hunyadi, my fellow-voyager of the *Helios*. We had the loveliest weather during this excursion, as indeed during the whole week in Bombay; it was only a little too hot, 37° centigrade in the shade at noon, and from 27° to 32° during the chief part of the day. The nights, too, were very sultry, and once the thermometer stood at 32° at midnight.

The railway journey to Lanauli, the first portion of the great Bombay and Madras Railway, lasted five hours, giving rise to many sighs on our part under the scorching sun, as well as distilling from us a great deal of sweat; and yet the first-class carriage in which we rode was extremely comfortable, and supplied with the most elaborate protection against the tropical sun: a double roof with projecting eaves, Venetian blinds and green screens to the windows, inside and outside curtains, cool and easy leather cushions, ingenious devices to secure ventilation, and—greatest luxury of all—little bath-rooms with cooled water, in which I took a refreshing plunge more than once during our hot journey. Each first-class carriage is composed of two spacious saloon compartments, licensed to carry only six passengers, while in Europe we should cram in three times, or at least twice as many. There are three seats in each compartment, two along the sides and one across; at night another seat or shelf is suspended over each, at about four feet above it; thus six beds are formed, much roomier and more comfortable than the berths in a cabin. Besides this, a portmanteau can be conveniently stowed and unpacked in the little saloon, and passengers can walk up and down, or gaze out of the many windows on each side at the landscape as it flies past.

This occupation was to me supremely attractive, and during our short five hours' journey I noted a number of interesting Indian scenes

in my sketch-book. The railway passes at first through a considerable portion of the town of Bombay itself, by Byculla, Parell, and Sassoon; then across a bridge over a narrow arm of the sea to the island of Salsatte and by a second bridge to the mainland of Western Hindostan. The line is on a level for several miles through the low coast-plain of Konkan. Several villages of wretched cane-huts, and a few little towns of small extent, give the traveller some idea of the Mahratta population of this district. All through the rainy season, from June till September, this wide plain is covered with luxuriant tall grasses, and cultivated to a considerable extent with rice, maize, etc. At this time of year the vegetation had all been burnt up for a month past, and the wide grass-fields were straw-coloured. But the evergreen plants, which are numerous, remained fresh—the banana plantations and fig-groves round the houses, and, above all, the finest representative of the flora of the Konkan, the splendid Palmyra palm, *Borassus flabelliformis*. Thousands, nay millions of this stately fan-palm, with its perfectly straight black trunk, are to be seen on every side, here singly, there in clumps, and give the flat coast land a highly characteristic physiognomy. The Palmyra, like the cocoa-nut and date palms, is one of the most useful trees of its tribe; almost every part of it serves some purpose in domestic economy or manufacture. The groups of these palms that stand on the margins of the numberless reedy tanks, look strikingly elegant as we rush past them; the picturesque foreground consisting of clothes-less brown natives with their two-wheeled bullock-carts, buffaloes bathing, and square bamboo hovels; while in the background rise the singular peaks of the Bhor Ghauts, the castellated rock-wall which forms the rampart, two thousand feet high, of the extensive plateau of the Dekhan.

The station of Kurjut, beyond Noreb, lies at the foot of the ascent, and the light locomotive which had brought us so far was exchanged for a powerful mountain engine. The gradient is in some places very considerable, as much as one in thirty-seven; in a few hours' journey the line ascends above two thousand feet. Numerous tunnels and viaducts, with sharp turns round steep cliffs, remind us of our picturesque Alpine lines of railway near Semmering and the Brenner. Even there the steepest gradient is not more than one in forty.

The surrounding landscape meanwhile assumes a quite different character. The palms which grace the lowlands in such vast numbers entirely vanish quite at the beginning of the ascent; huge forest trees take

their place, some columnar in their growth, some thickly branched. Among these are the lofty teak, and cotton-trees with very large leaves. The steep slope of the Dekhan highland, which in some places forms steps or terraces, is deeply furrowed with many water-courses, and these ravines with their dense undergrowth give the mountain-like slope a European aspect. Still, the structure and shapes of the huge cliffs of the Bhor Ghauts are quite peculiar, and wholly unlike any European range known to me. They appear now as colossal and almost perpendicular black walls more than a thousand feet high, and now as broad low table-rocks with their peaks cut off horizontally; again as river bastions, their turret-like battlements looking from a distance like a gigantic fortress with numerous pinnacles and watch-towers. Although the Plutonic formation of the Bhor Ghauts—principally consisting of blackish trap-rock and a syenite resembling basalt—differs essentially from the stratified freestone of the Saxon Switzerland, the general appearance of the table-rocks is often strikingly like it.

In the same way as the aspect of the wooded mountainside, with its many fissures and total absence of the gorgeous vegetation of the tropics, seemed to transport us from the nineteenth to the fifty-third degree of latitude, so also the air we breathed seemed altogether different. Instead of the oppressive heat there was a delicious coolness, and we inhaled the strong fresh mountain breeze with delight—one of the blessings of a temperate climate which we do not duly appreciate till we miss it painfully under the debilitating influence of a tropical sun. The higher we mounted the more we felt at home; but this illusion was somewhat disturbed by the information that in the deep water-course by the side of which we were travelling, an English captain had, two years since, been killed by a tiger. Here two waterfalls tumbled down from a considerable height. Such cataracts are very numerous during the rainy season, but they were now generally dried up, and thin, yellow grass covered the surface where it was not overgrown with trees or with jungle.

Shortly before reaching Lanauli we passed the station of Matheran, a favourite summer resort of the richer residents in Bombay. Several beautiful sites in its immediate neighbourhood afford lovely panoramas, with wild and romantic peeps into the mountain ravines on one side, and on the other, wide views over the level coast and the sea as far away as to Bombay. A remarkably curious rock close to the station next before this Reversion station, is known as the "Duke's Nose," in honour of the Duke of Wellington. It was quite dark when, after seven hours'

journey to a height of 2100 feet above the sea-level, we reached our destination, and found very miserable accommodation in a little hotel kept by a Parsi.

The next morning we had determined to make an excursion to the famous Buddhist rock-temples of Karli, which are said to exceed all that are known in extent and in the richness of their sculptured ornament. We had ordered ponies to be round by five o'clock, to carry us up a bit of mountain road and very near to the caves. But when we were prepared to bestride our mountain steeds there appeared, instead of these, a fine carriage with two horses which our wily host had thought it more advantageous to provide. There was nothing for it but to get in, and it conveyed us not more than half an hour's drive further along a good high-road; then we were forced to get out and proceed on foot for another hour over fields and meadows. Finally, we had a good half-hour's climb uphill to the caves. They lie about half-way up the western slope of a hill of trachyte which stands up more than a thousand feet above the plateau of Lanauli, which is on a level with the rest of the table-land of the Dekhan.

The Buddhist cave-temples of Karli are much larger and far more ancient than the Brahminical temples of Elephanta; the sculpture, too, is simpler and less grotesque, and the figures of the men and animals more natural. They are considered the finest works of the kind known. Like the caves of Elephanta and many others in India, these at Karli are hewn out of the very rock that forms the mountain, and so are all the sculptured figures of men and animals which decorate the walls in immense variety. The grand central hall or chaitya of the temple at Karli a vast semi-circular vault, is divided into a nave and two side aisles by two rows of pillars. All the figures, male and female, with elephants, lions, etc., and the pillars and door-post as well, are chiselled out of the black trap-rock with great skill, and smoothly polished; they are said to be superior to most of the other Indian temples, both in taste and in careful execution. Above the principal temple, and on each side of it at 2550 feet above the sea, small chambers have been hewn out of the rock, out of which we scared immense swarms of bats. Outside the entrance to the cave-temple are a few smaller temples or shrines, overshadowed by fine trees of the sacred fig. A few Buddhist priests who spend their lives there asked for alms. While they were muttering prayers in gratitude for our charity, we heard a loud screaming at the top

of the cliff, and, looking up saw several large black apes, or wanderoos, which sprang away with long leaps. These were the first creatures of the kind I had ever seen wild; and, comparing them with the dirty and naked begging priests at our feet, they seemed to me a highly respectable ancestry for them.

The view from the door of the temple of Karli — or, even better, from the projecting rock above, up which we scrambled after the apes— commands the whole plateau of Lanauli. This extends, a level plain, for some distance towards Poonah, and it is surrounded by an amphitheatre of low hills, mostly barren. Here begins the great table-land of the Dekhan, which occupies the larger part of the peninsula of Hindostan, sloping gently to the sea on the eastern or Coromandel coast, while to the west, above Konkan and the Malabar coast, it is almost everywhere abrupt and steep.

We left Lanauli at noon on the 12th, greatly pleased with our excursion, which had enabled us to see one of the most interesting bits of the highland, and found ourselves in Bombay before sunset.

CHAPTER III

COLOMBO

It was on the 21st of November, in the glorious light of a cloudless tropical morning, that I first set foot on that evergreen island of marvels, Ceylon, where I was about to spend the most instructive and delightful months of my life. The Austrian-Lloyd's steamer *Helios*, which had brought us hither from Bombay in five days, through lovely weather and over a glassy sea, was in sight of the island by midnight. I was on deck by the earliest dawn, to catch sight at the first possible instant of the longed-for goal of my voyage—the promised land of my desires as a naturalist.

There, in the east, a narrow streak was visible on the dark mirror of the Indian Ocean, a little thicker in the middle than at the ends, with a point standing up. The brief tropical gloaming vanished swiftly before the coming day, and the narrow streak lay revealed as an extensive shore covered with cocoa-nut groves fringing the west coast of Ceylon, the thicker middle being the high chain in the centre, above which the cone of Adam's Peak, the famous and legendary mountain-summit of the island, towered conspicuously. The outlines of the dark blue mass stood out sharp and clear against the bright and cloudless morning sky, and when the fiery ball of the rising sun mounted above it, we could distinguish a chain of lower hills in the foreground between it and the coast. The white trunks of the cocoa-nut palms on the shore were distinctly visible, and as we steamed nearer we could see the different quarters of the chief town, Colombo: straight in front of us the Fort

and the harbour; to the left, northwards, the native town—Pettah; to the right, southwards, the suburb of Kolpetty. I accepted it as a good omen for the happy issue of my expedition that I first saw the longed-for isle under the happy radiance of an unclouded sky and the perfect clearness of the pure and balmy morning air, and all the more because, even in the early part of the day, clouds more or less remote generally veil the mountains, partially if not entirely.

The first boat which came up to the vessel brought the pilot on board to steer us into the harbour. This boat, like all the others which soon crowded around us, was of that very singular form which is widely used throughout the islands of South-Eastern Asia, and which in Ceylon—its most westerly limit—has reached a peculiarly strange development. It is a tree-trunk about twenty feet long, and hollowed out; the two sides are raised about three feet by perpendicular boards lashed on, but the width between them is scarcely a foot and a half, so that a fully grown man cannot sit in these canoes without arranging his legs one behind the other. On one side of the boat two parallel, curved bars or bamboo-canes stand out at a right angle, and their ends are connected by another and stouter cane parallel to the canoe itself. This outrigger lies on the surface of the water, and gives the frail and narrow bark a considerable degree of security. When, at a later date, I made my various zoological expeditions almost exclusively in these singular boats, I had ample opportunity of judging of their merits and demerits. On my first arrival they excited my interest principally by their picturesque aspect, particularly as their Cinghalese navigators were no less original and peculiar than the boats themselves.

Our ship was soon safe in port and covered with Cinghalese offering fruit, fish, and other eatables for sale, as well as various small products of native industry. Most of them were naked brown figures, their only item of clothing being the *comboy* or *sarong*, a strip of red woollen stuff which is tightly wound round the hips under a girdle, and covers the greater part of the legs like a large apron. Others, again—particularly the boatmen—restrict their garments to a short and narrow waist-cloth, like swimming drawers. All, however, wore their black hair long and elaborately dressed, and generally twisted into a thick knot, with a large tortoise shell comb stuck in at the back of the head. This gives them a curiously feminine appearance, which is increased by their slender and fragile proportions. Their hands and feet are particularly small, and

their features weakly moulded. The naked black Tamils who row the coal-boats are, on the other hand, far stronger and more manly; and different, again, from either are the Indo-Arabs, or "Moormen"—stalwart figures in long white caftans and white drawers, their brown and bearded faces crowned with tall yellow turbans. They bring precious stones, shells, silver filagree, and other ornaments on board to sell; while the Cinghalese deal in cocoa-nuts, bananas, pine-apples, fish, and crabs, or in the characteristic products of their own industry, such as images of elephants, or of Buddha carved in ivory or ebony, basket-work and mats of plaited reed or palm fibre, little boxes and sticks of variegated woods, etc. The price they ask for these things is, as a rule, twice or three times, often indeed ten times, their value; and one of my fellow-voyagers purchased for a rupee a handsome stone for which the owner at first asked eighty rupees! This costly gem, it need hardly be added, like most of the "precious stones" from the "isle of rubies," was neither more nor less than a specimen of European workmanship in the form of a bit of cut glass; they are imported annually in large quantities.

While this amusing scene was taking place, in the still early morning, on board our vessel, the Austrian Lloyd's boat had come out, bringing out their agent for Colombo, Herr Stipperger. I was specially recommended to this gentleman's care, not only by the Company's Board at home, but by personal friends in Trieste and Bombay, and was most kindly welcomed by him. He at once invited me to spend my first weeks in Ceylon at his house, and did everything that the greatest attention and politest care could do to render my stay in the island as pleasant and profitable as possible. I owe him a debt of gratitude, and do no more than my duty in here expressing my warmest thanks for the indefatigable kindness he showed me during the whole four months of my visit to Ceylon. If I was enabled to make the best use—so far as in me lay—of this short time, and to see and enjoy, learn and work more than many travellers accomplish in a year, this was, in first degree, due to my "Ceylon Providence," as I jestingly named my worthy friend Stipperger. He was a Viennese by birth, and a few years younger than myself, and had been an officer in the Austrian navy; subsequently, after many vicissitudes of fortune, he entered the service of the Company. I only hope that his employers adequately appreciate and remunerate his remarkable capacities and his extensive information.

Bidding a hearty farewell to the officers of the *Helios* and my fellow-travellers proceeding to Singapore and Hong Kong, I quitted the noble

ship which had brought me so safely and easily from Trieste, and was conveyed in the Company's boat—for I was treated as under their special protection—with Herr Stipperger to the shore. By this gentleman's good offices, and with the assistance of the official introduction I held from the English Government to the Governor of Ceylon, my vast collection of luggage was passed duty free, and I was spared the odious chaffering attendant on the opening of sixteen cases and trunks. We at once got into a carriage and drove to the office of the Austrian Lloyd's Company, whence we went to breakfast at the club. I then made use of my first few hours to pay some necessary calls and deliver several valuable letters of recommendation most kindly given me by the German consul in Colombo, who at that time was in Europe.

In this way I spent the morning and part of the afternoon, and on this my first day in Ceylon, under the guidance of my kind and remarkably well-informed host, I made acquaintance with a great part of Colombo, the chief town of the island, and with its inhabitants, who to me personally were its most interesting feature. By five o'clock I had paid all my first visits and started in Stipperger's light two-wheeled carriage, behind a swift black Australian horse, for his residence, "Whist Bungalow," at an hour's walk—about three miles—from the Fort, the business quarter of the town.

Colombo, like Bombay and most of the great towns in British India, consists of an European business quarter, known as the Fort, and of several suburbs which surround it, and are the head-quarters of the native population. The Fort of Colombo was erected and strongly fortified by the Portuguese in 1517, as being their most important factory in Ceylon; they were the first European occupants of the island, having landed there in 1505, and retained their footing there for a hundred and fifty years—about as long as the Dutch, who forced them to quit. Under the Dutch, as under the English, who, on the 18th of February, 1796, took Ceylon from the Dutch, Colombo remained the capital, although in many respects other sites, and particularly Punto Galla (now known as Galle), offered superior advantages. During the last few years, the English Government have made every effort to confirm Colombo in its pre-eminence, and so, in spite of many drawbacks, it is still the capital, at any rate for the present.

The first obvious essential for a sea-port town is a good harbour. In this respect, Colombo fails, while at Galle there is a fine one. In these

days, to be sure, an artificial harbour can be constructed at almost any point on any shore, by dredging where the sea is shallow, and by building up breakwaters of stone on the sides most exposed to dangerous winds and heavy seas. Nothing is wanted but the money! This is how the artificial harbour of Port Said was made, at the northern outlet of the Suez Canal. In the same way, the English Government has, within the last few years, constructed a stupendous breakwater, at a great cost, on the southern side of the harbour of Colombo, which is naturally small and poor. It runs out a great distance into the sea, in a north-westerly direction, protecting the port against the fury of the south-west monsoon, while it considerably extends the space for shipping. But it is thought very doubtful whether this breakwater can be permanently kept up without constant expense for repairs. It is certain that the fine natural basin of Galle could have been considerably improved, and made superior in every respect at much less cost. The rocks and coral reefs which impede the entrance of vessels, could, with our present command of explosives, be removed at a small outlay in dynamite.

However, the old capital has hitherto triumphed over Galle in the competition between the two ports, though this is the more favoured by nature, and deserves the pre-eminence alike by its climate, geographical position and surroundings. The climate of Colombo is particularly hot, oppressive and debilitating; indeed, one of the hottest in the world, while that of Galle is tempered by refreshing breezes. The pretty hill country in the neighbourhood of Galle, part under the richest cultivation, and part covered with woods, make a residence there both pleasant and healthy; while round Colombo the country is flat, with many swamps and stagnant pools. Galle lies in the direct sea-route between Europe and the Indies, and so, till within a short time, was naturally the central station of all shipping communication with Ceylon. Now, on the contrary, when all the European trade has been absorbed by Colombo, vessels have to go out of their way, into Colombo and out again, as the straits of Manaar are not navigable. In spite of all this, Colombo still triumphs, and the largest and most influential of all the Indian shipping companies—the P. and O.—are transferring their offices and warehouses from Galle to Colombo, most of the other companies having in fact preceded them. The serious disturbance and upset incurred was a constant subject of eager discussion during my stay in Ceylon.

The Fort of Colombo is on the south side of a bay, and on a low rocky promontory of small extent, visible at a great distance as a

landmark on the flat western coast. This eminence was marked on a map of Ceylon—*Salike*—made by the ancient geographer Ptolemy, in the second century, A.D., and really admirable under the circumstances. He named it *Jovis extremum—Dios Acron.* The walls of the Fort, which was strongly fortified by the Dutch, are armed with cannon and almost entirely surrounded by water; two-thirds of this is sea, and the rest, to the south-east, a wide lagoon crossed by several dykes and bridges which join the fort to the main land. The streets in the Fort, which are few and narrow, crossing at right-angles, chiefly consist of the offices and warehouses belonging to European merchants; there are, however, a number of public and government buildings. Among these the handsome residence of the governor, known as the Queen's House, is the most important. It is surrounded by a perfect garland of tropical vegetation, and has large pillared halls, fine airy reception rooms, and a noble staircase. I visited this palace a few days after my arrival, when the governor received me on the delivery of my letters of recommendation from the English Government. The interior decoration is in excellent taste and worthy of the oriental state of a British despot; for such the governor of the island is to all intents and purposes. Numbers of Indian servants in gay and fanciful liveries perform the service of the house, while English soldiers in scarlet and gold mount guard.

Chatham Street, the street in the Fort in which the Austrian Lloyd's office is situated, and which was the first I became acquainted with on landing, is decorated like many others in Colombo and Galle, with shady avenues of a fine mallow, *Hibiscus*; the large yellow or red blossoms strew the earth in every direction. Chatham Street also contains those shops which alone possessed any interest for me in all Colombo—windows full of photographs, and stalls with living animals.

Within a few hours of my arrival in Ceylon, I had the very great pleasure of forming an idea, from the photographs in the windows, of the finest points in the wild highlands and the picturesque coast, as well as of the astounding marvels of its magnificent vegetation: palms and Pisang, *Pandanus* and Lianas, tree-ferns, banyans, etc. Nor did I, naturally, find less attraction in making myself acquainted, before I had been many hours in the island, with some of its most interesting animals; above all, the apes, the dappled Axis deer, the parrots and the gorgeously coloured pigeons.

South of the Fort are the barracks for the English troops, fine airy buildings and tents extending in some places to the shore of the lagoon.

Farther south again is the military hospital, and beyond it a green esplanade called "Galle face," because the long tract of coast lying towards Galle begins here. Between five and six in the evening, the broad green lawn of the esplanade, stretching southwards between the lagoon and the sea, is the rendezvous for all the rank, beauty and fashion, of Colombo. Here, during the season, as in Hyde Park in London, is the spot where every one meets every one else; and the world refreshes itself in the cool evening breeze after the burden of the noon-tide heat, while enjoying the gorgeous spectacle of the sunset, often made still more splendid by the most varied and singular cloud-scenery. The gilded youth of Colombo exhibit themselves on horseback—some of them on miserable hacks indeed—the ladies, with bouquets in their hands, recline languidly in their carriages, in the lightest and most elegant toilettes. But no sooner is the sun gone down than all hasten home; partly in order to escape the fever-laden evening air, partly to go through an elaborate process of "dressing for dinner," which is usually at half-past seven, and of course in the indispensable black tail-coat and white neck-tie, as in "Old England."

The first time I happened to cross the esplanade under a midday-sun, I understood the whole fierceness of that truly infernal heat which Helios can produce on these unsheltered flats in Ceylon. The outline of objects at a very small distance floated and trembled in the undulating light of the rising current of heated air, and over the red gravel path dividing the green lawn, I saw a *Fata Morgana*, which is frequently observed here. This mirage showed me a sparkling pool of water in the roadway, which parted before the vehicles and foot-passengers exactly like a ford. The thermometer marked 30° centigrade (86° Fahrenheit) in the cool and reviving atmosphere of the club; outside, in the sun, it must certainly have risen to 45° or 50°.

Adjoining the southern end of the esplanade is a suburb which lies between the sandy sea-shore and the highroad to Galle—Kolupitya or Kolpetty. On each side of the road stand a number of beautiful villas, shaded by lovely gardens, and to the west they extend into the Cinnamon Gardens, as they still are called. At the present day, and ever since the English Government found itself compelled to give up its lucrative monopoly of the cinnamon trade, these groves have been for the most part divided into lots, and turned into private grounds for the wealthiest merchants. The elegant houses which nestle among them, are surrounded by the choicest growths of the tropics, trees, shrubs and flowers. These

residences are the dearest and most luxurious in the neighbourhood, and Cinnamon Gardens is considered the best and most fashionable quarter. However, its remoteness from the shore and the refreshing sea-breeze, as well as its low situation close to the lagoon, are great drawbacks. The oppressive and enervating heat is here at its worst, and dense clouds of mosquitos in the evenings make a residence there most uncomfortable, while crowds of frogs, and treefrogs of different kinds, disturb the night with their noisy concert.

All this is equally true, and in a worse degree, of the adjoining quarter of the town, Slave Island, so called because in the last century the Dutch imprisoned the state slaves there every night. The natural scenery of this part of Colombo is, however, the prettiest in Ceylon. The little bays of the wide lake are covered with lovely and carefully kept gardens, over which the cocoa-nut palms bend their slender stems and feathered crowns. Villas belonging to Europeans, and huts inhabited by natives, are scattered among them; and in the blue distance the mountain chain of the central ridge forms a magnificent background, where, in the midst, towering above its neighbours, rises the tall cone of Adam's Peak. An evening sail in a canoe on this calm lagoon, with its lovely shores, is one of the delights of Colombo.

To the north of all this lies the crowded native town of Pettah. It runs along the shore for above a mile, as far as the mouth of the river that waters Colombo—Kalany Ganga, or Kalan Ganga. From this, indeed, the town originally took its name, Kalan Totta, or Kalan-bua. So long ago as in 1340, Ibu Batuta* mentions it under the name of "Kalambu," as the "finest and largest town in Serendib," the old Arab name for the island. The Portuguese changed this to Colombo.

It is here, where the noble Kalany rolls into the Indian ocean, forming a large delta, that the house stands, near the picturesque outlet, and close to the sea, in which my friend Stipperger lives, and in which I spent my two first and delightful weeks in Ceylon. Here I took my fill of the enjoyment of those new, stupendous, and astounding sensations, which in Ceylon crowd upon the newly-come European, or Griffin.

And this most northern outskirt of Colombo, which is known as Mutwal—at the farthest end being called Modera—is, in my opinion,

* Muhamed Ibn Abd Allah (called Ibn Batuta) Travels, translated by S. Lee. Published by the Oriental Translation Fund, London, 1829.

one of the most beautiful and interesting spots in the neighbourhood of the capital.

Never shall I forget the many-hued splendour of the strange Indian scenes which passed before my astonished eyes like the changing pictures in a magic lantern, when, in the evening, I drove out from the fort to "Whist Bungalow." As I passed through Pettah, all the mixed and motley population of every type characteristic of Colombo were out of doors, collected in knots at the open doors of the little houses, or mingled in busy confusion under the shade of the cocoa-nut trees that tower up wherever you turn. Here, as everywhere else between the tropics, the life and labours of the natives are for the most part carried on in public; and while the fires of a tropical sun reduce men's requirements in the article of clothing to a minimum, the heat makes them leave their houses and stalls wide open, neither doors nor shutters interfering with a free view of the interior. In the place of a door there is simply an opening closed at night or in stormy weather, with screens of matting, or latteen shutters pushed across. All the handicraftsmen may thus be seen at work in, or in front of their stalls, or simply in the open streets; nor are the most intimate scenes of domestic and family life veiled from the curious eye.

The particular charm which these native homes certainly possess for the European, consists partly in this naive publicity of their domestic life, partly in the primitive simplicity of their wants, as shown by the limited number of barely necessary chattels, partly in their harmony with the nature among which they live. The little garden-plots which always enclose these hovels are so unpretentiously laid out, and the few useful plants they contain—which yield the chief income and sustenance of their owners—are so quaintly grouped round them, that the whole settlement looks as if it had sprung from the earth together.

The most important of these natural products are those princes among plants, the palms, and of these, on the southern and western shores, the cocoa-nut palm, every part of which, as is well-known, has its use, often constituting the whole fortune of a Cinghalese. It is in consequence the all-pervading tree which, in every town and village, as well as in the country, first and most constantly strikes the eye, giving the landscape a character of its own. The number of cocoa-nut palms in the island is nearly forty millions, each producing from eighty to a hundred nuts, yielding eight to ten quarts of oil. In the northern half of the island, the cocoa-nut is absent, and in many parts of the eastern

coast. Here the not less valuable Palmyra palm (*Borassus flabelliformis*) takes its place. It is the same species that grows on the hottest and dryest tracts of the main peninsula, and which I saw in such numbers on the coast of Konkan, near Bombay. These palms are conspicuously dissimilar, even from a distance. The Palmyra is a fan-palm, and has a stout and perfectly straight black trunk, crowned by a thick sheaf of stiff, deeply cut pinnate leaves. The *Cocos*, on the contrary, is a feathery palm: its slender white trunk, sixty to eighty feet high, is always gracefully bent, and bears a dense crown of immense pinnate leaves. The elegant Areca-palm (*Areca catechu*) has similar leaves, only smaller and stiffer, but its reed-like stem grows perfectly upright; it also is to be found near the huts of the Cinghalese, and yields him the indispensable nut which all the natives chew with the leaves of the betel-pepper, and which dyes the saliva and teeth red. Another palm, the Kitool (*Caryota urens*), is largely cultivated for the sake of its abundant sugary sap, from which palm sugar, or *jaggery*, and palm wine, or toddy, are prepared. Its straight, strong stem has a crown of bipinnate leaves, somewhat resembling those of the maiden-hair (*Adiantum capillus Veneris*) on a large scale.

Next to the palms the most valuable trees in the native plots are the bread-fruit and the mango. Of the first there are two distinct species: the true bread-fruit (*Artocarpus incisa*) and the Jack-fruit (*Artocarpus integrifolia*). Splendid specimens of both are everywhere to be seen, and between them not unfrequently the curious silk-cotton tree (*Bombax*). Among and under these trees, the huts of the Cinghalese are always surrounded by their constant companion, the beautiful banana, or *pisang* trees (*Musa sapientum*), which have worthily earned the name of "figs of paradise." The handsome yellow fruit, whether raw or fried, is a wholesome and nourishing food, and many varieties are to be seen. The elegant sheaf of huge, drooping, pale-green leaves crowning a slender stem often twenty to thirty feet high, is one of the greatest ornaments of the native gardens. Hardly less necessary to the Cinghalese are the Aroids, with great arrow-shaped leaves, particularly the *Caladium*, which is very generally cultivated for the sake of the farina procured from the roots, for which, too, the graceful manihot is grown, one of the Euphorbiaceae with digitate leaves of a beautiful green, which is equally conspicuous as a contrast with the brown earth huts, and with the bright red colour of the soil, which is strongly impregnated with oxide of iron. In perfect harmony, too, are the cinnamon-hued Cinghalese themselves, and the blackish-brown Tamils.

In Colombo itself, and throughout the southern and western coasts of the island (excepting part of the north-west), by far the greater portion of the population consists of true Cinghalese. By this name are distinguished the descendants of the Hindoos from the mainland, who—according to the Pali chronicle the "Mahawanso," the principal authority on Cinghalese history—wandered hither from the northern part of Hindostan under King Wijayo, and expelled the primitive inhabitants. The Veddahs, or Vellahs, are commonly regarded as being the dispersed remnants of this race; a few wild hordes still linger in the remotest parts of the interior and in the most primitive state. But, according to others, the Veddahs are, on the contrary, debased and degenerate descendants of the Cinghalese, outcasts that have reverted to savagery, like the Rodiyas.

In the northern part of the island, on the eastern coast and throughout a large extent of the central highlands, the genuine Cinghalese were in their turn driven out by the Malabars, or Tamils, who crossed over from the south of the peninsula, chiefly from the Malabar coast. They differ from the Cinghalese in every respect—in stature, features, colour, language, religion, manners, and customs—and belong to a totally different branch of the human tree, the Dravida race. The Cinghalese are assigned by most anthropologists, and no doubt correctly, to an ancient offshoot of the Aryan race. They speak a dialect which seems to have sprung from a branch of the Pali, and the Malabars have a perfectly distinct language, the Tamil. The Cinghalese again are generally Buddhists; the Malabars are Hindoos, that is, Brahmins. The brown hue of the smaller and slighter Cinghalese is generally perceptibly lighter, verging on cinnamon colour, or a dark tan; that of the tall and brawny Malabars is very dark, coffee-coloured or blackish. The Cinghalese occupy themselves principally with agriculture, growing rice, planting palms, bananas and other trees needing culture, and shunning all hard or severe labour. This is undertaken by preference by the Malabars, who find employment as road-makers, masons, porters, coachmen, etc., in the low country, and as labourers in the coffee plantations in the higher districts. At the present time, the Tamils, or Malabars, compose about one-third of the whole population, and their numbers are reinforced every year by fresh immigrants from the peninsula. The Cinghalese constitute about three-fifths, and number at the present time about two millions and a half.

After the Cinghalese and the Tamils, the most important item of the population of Ceylon, both as to numbers and industrial worth, are the Indo-Arabs, here known as Moors or Moormen. They number about 150,000, a tenth of the Cinghalese. They are descended from the Arabs who, as much as two thousand years ago, set a firm foot in Ceylon as well as in other parts of Southern and South-Eastern Asia, and who, from the eighth to the tenth centuries—until the incursion of the Portuguese—had almost all the commerce of the island in their hands. Indeed, to this day all the petty trade, and a considerable part of the wholesale trade of Ceylon, is almost exclusively carried on by these energetic and thrifty foreigners. They here play a part analagous to that filled by the Jews in Europe, being enterprising, calculating, and even crafty, with a special aptitude for money matters. In other respects, too, they take the place of the Jews, whose congeners they are, and who are entirely absent from Ceylon. Their language and writing is to this day half Arabic and half a hybrid of Arabic and Tamil; their religion is Mohammedan and Sunni. They are of a brownish yellow colour, and their features are unmistakably Semitic; their hair and beard black and generally long. Their powerful figures, robed in the long white bournous and full white trousers, tower above the Cinghalese and Tamils all the more conspicuously as they generally wear a high yellow turban, something like a bishop's mitre.

In comparison with these main elements of the population of Ceylon—Cinghalese sixty, Tamils thirty-three, and Indo-Arabs six per cent.—the remainder, scarcely one-hundredth of the whole, are, as to numbers, quite insignificant. Of these twenty-five thousand souls the wild primitive race of the Veddahs are not more than two thousand; eight thousand—or according to some authorities about half that number—are immigrants from all parts of Asia and Africa—Malays and Javanese, who enlist as soldiers; Parsis and Afghans, most of them money-lenders and usurers; Negroes and Kaffirs, who are soldiers, servants, etc. The mixed breeds of all these native races and the European settlers, about ten thousand, include every possible combination, and offer very interesting problems to the anthropologist who should try to classify them. Then there are the burghers, as they are called—the descendants of the Portuguese and the Dutch—generally with some infusion of Cinghalese or Tamil blood. Most of the clerks and accountants in the offices and counting-houses, and the inferior government officials, are of this mixed race, and they are thought highly of in these capacities.

The number of Europeans, the non-native lords of the island, is altogether not more than from three to four thousand, English and Scotch of course preponderating. All the higher government offices, and the great merchant houses, are in their hands. In the mountains they compose the large and influential class of "planters," whose curious existence I subsequently learnt something of in my journey through the hill-districts.

According to the census of 1857, twenty-five years since, the whole population of Ceylon amounted only to 1,760,000. By 1871 it had increased to 2,405,000; and at the present day it must be considerbaly more than 2,500,000. If we take it at two millions and a half in round numbers, at the present day the different elements may be estimated somewhat as follows:—

Cinghalese—chiefly Buddhists	1,500,000
Tamils, or Malabars—chiefly Hindoos ...	820,000
Indo-Arabs, or Moormen—chiefly Mohammedans	150,000
Mixed races of all kinds	10,000
Asiatics and Africans—Malays, Chinese, Kaffirs, Negroes	8,000
Burghers—Portuguese and Dutch half-caste ...	6,000
Europeans—mostly English	4,000
Veddahs—the primitive inhabitants	2,000
	2,500,000

The extent of the island is not less than 1250 square miles (geographical), so that it is scarcely one-sixth less than Ireland, and with its wonderfully favourable conditions of climate and soil it could easily support six or eight times as many inhabitants; indeed, according to ancient chronicles, the population would seem to have been much larger two thousand years ago—perhaps more than double. The depopulated and in many places utterly deserted northern half of the island was at that time thickly peopled; where enormous jungles now afford a shelter to bears and apes, parrots and pigeons, wide stretches of cultivated ground were fertilized by an admirable system of irrigation. The remains of the hill-tanks and the ruins of their abandoned towns—Anarajapoora, Sigiri, Pollanarrua and others—testify to this day to their former greatness, and show what this "island of jewels," the "rarest pearl in India's crown," the "ruby isle," may again become in the future.

The various races which compose the medley population of Ceylon differ as widely in faith and religion as in origin, build, colour, language, writing, character and occupation; and their creed for the most part is an inheritance of their race. The Cinghalese, sixty per cent., are almost all Buddhists; the Tamils, thirty-three per cent., chiefly Brahmins; the Indo-Arabs, six per cent., almost all Mohammedans. A considerable number of all these races have, however, become converts to Christianity, and the remainder of the population is for the most part Christian. In round numbers the adherents of the different creeds may be estimated as follows:—

Buddhists—mostly Cinghalese	1,600,000
Brahmins—Hindoos, mostly Tamils	500,000
Mohammedans—Sunnites, chiefly Arabs ...	160,000
Roman Catholics—many Tamils and Cinghalese	180,000
Protestants—chiefly Europeans	50,000
Of no denomination, and of various classes ...	10,000
	2,500,000

CHAPTER IV

"WHIST BUNGALOW"

THE delightful residence in Colombo in which I passed the two first weeks of my stay in Ceylon, stands, as I have said, at the north end of the town, or, to be accurate, in the suburb of Mutwal, precisely in the angle made by the Kalany Ganga, or Colombo river, at its junction with the sea. Starting from the Fort, it is a good hour's walk among the brown mud-huts of the natives, through Pettah and its northern outskirts, before reaching "Whist Bungalow." Its isolated position, in the midst of the most luxuriant natural beauty, far from the business quarter of the town, and farther still from the fashionable southern suburbs or Kolpetty and the Cinnamon Gardens, was one source of the extraordinary charm I found from the very first in this quiet country retreat. Another reason, no doubt, was the hearty and homelike hospitality which the masters of "Whist Bungalow"—Stipperger himself and three other friendly countrymen—showed me from the first hour of my arrival. I woke on the first morning of my stay with the happy sense of having found here, on this unknown island of wonders, six thousand miles from home, a friendly roof to dwell under. The few days which were all I at first intended to spend there soon stretched into a fortnight; and as I again spent a week there on my return from the south, and another at the end of my stay in Ceylon, nearly a month out of my four months in the island were passed in this delicious country-house. There was ample room in "Whist Bungalow" for arranging my numerous cases and collections, and I found it the most convenient head-quarters

from whence to make my several excursions; and after much fatigue and hardship in my labours on the south coast, and my excursion in the hill country, I came back thither with the comforting sense of being at home, a gladly suffered guest on a visit to faithful friends and fellow-countrymen. It is only meet and right that I should devote a few pages to a description of this lovely spot of earth; all the more so, since it was there that I first made acquaintance, from personal observation, with the life of man and nature on the island.

"Whist Bungalow" owes its extraordinary name to the circumstance that its first owner, an old English officer, at the beginning of the century, used to invite his friends out to this remote villa to play whist on Sunday evenings. As the strict observance of the English Church is, of course, strongly averse to such an employment on Sunday, these jovial meetings were kept a profound secret; and the whist parties and drinking bouts in the isolated bungalow seem to have been uproarious in proportion to the satisfaction of these jolly comrades at having escaped the dreary tedium of an English Sunday and orthodox society.

At that time, however, "Whist Bungalow" was a small plain house, buried in its shrubbery; it was enlarged to its present handsome dimensions by its next owner, a certain lawyer named Morgan. He, too, seems to have made the most of life, and spent a large part of his fortune in building and decorating this villa in a manner worthy of its beautiful situation. The large garden was planted with the finest trees and ornamental shrubs. A handsome collonade and airy verandah were erected round the house, which was much enlarged, and the spacious and lofty rooms were fitted with every luxury in a princely style. For many a year dinners and wine-parties were given here, more luxurious and splendid—if not noisier and more riotous—than formerly at the whist-playing officer's less pretentious drinking-bouts. It would seem, however, that Mr. Morgan at last failed to balance his enormous outlay on his residence and his magnificent style of living against his large income. When he died suddenly, a considerable deficit was discovered in his accounts; his creditors seized the bungalow, and, when it was finally sold under the auctioneer's hammer, were thankful to recover a small proportion of their money out of the proceeds.

Now came a crisis in the history of this pretty residence, which must have proved highly unsatisfactory to the new owners. Rumour, which had attached many legends to this romantic spot, now declared

with confident asseveration that there was something uncanny about "Whist Bungalow," and that the ghost of the suddenly deceased Mr. Morgan "walked" there every night; that at about midnight—moon or no moon—a hideous uproar and thumping were to be heard; that forms in white glided through the rooms, winged demons flew along the colonnade, and fiends with fiery eyes held sabbath on the roof. Mr. Morgan, as master of the fiends, was supposed to conduct and direct the revels. It was asserted that his enormous fortune, now melted into thin air, had not been earned by quite honest means; and that he, like so many other lawyers, had used his knowledge of the law, not so much to vindicate his clients' rights, as to divert the flow of their gold into his own wide money-bags; that he had embezzled large sums, made away with trust moneys, etc., etc. As a punishment for these sins, he was compelled to haunt the scene of his former orgies all night, a restless ghost. And so many Cinghalese in the immediate neighbourhood of Mutwal had themselves heard these bogey noises, and seen the apparitions, that the purchasers of "Whist Bungalow" would not live in it themselves, and could not find a tenant.

The pretty villa therefore stood empty, when our friend Stipperger heard of it, and on seeing it, determined at once to take it. But then he met with the greatest difficulties, for he could nowhere find a servant who would go with him to the banned and haunted house. Nor did he succeed till he had proved on scientific grounds that the ghosts had a simple zoological origin. He waited for the fiends the first night, well armed with weapons and revolvers, and he found, as he expected, that they were true quadrupeds of flesh and blood, to which the late Mr. Morgan had certainly stood in no close relationship. The mysterious climbing ghosts, when shot, were wild cats; the gliding forms were huge bandicoots, and the flying fiends were flying foxes (*Pteropus*). Henceforth, and face to face with these convincing trophies of the night's sport, the doubts of the most timorous servants were dispelled, and my friend moved in all confidence into "Whist Bungalow."

The garden, which had run wild, was newly and better arranged, the empty rooms refitted; and when some Germans saw the restored bungalow, it pleased them so much that they begged the new tenant to cede them part of the spacious house for a residence. This he did; and when I arrived, I found the quartet of Germans—a four-leaved shamrock—with whom I chatted through so many pleasant evenings. Nor was there any lack of individuality in our several views; indeed, I have

never found it absent in spite of the much-talked of "German uniformity." Herr Both, of Hanau—to whom I am indebted for a nice collection of reptiles—represented Frankfort; Herr Suhren, of East Friesland—who gave me a beautiful collection of butterflies—represented the extreme north-west of Germany; and Herr Herath, of Bayreuth, our Bavarian member for South Germany, delighted me with a contribution of birds of paradise, parrots, and honey-birds.

The special charm of "Whist Bungalow," above others near Colombo, consists partly in its delightful situation, and partly in its really magnificent garden. The out-buildings, servants' rooms, and stables lie behind it, hidden among shrubberies, while the house itself stands in front on the shore of the fine expanse of water that stretches away westwards. The airy verandah commands a view of the sea, the mouth of the river, and of a pretty, thickly wooded island that crowns its delta. Northwards, the eye follows a long strip of cocoa-nut groves, that fringe the shore as far as Negombo. To the south, and adjoining the gardens of the bungalow, is a picturesque tract covered with fishermen's huts scattered in delightful disorder under tall cocoa-palms, in their midst a small Buddhist temple, and farther off the rocks on the shore with clumps of *Pandanus*, etc. Beyond, a narrow sandy spit projects, bending northwards towards the mouth of the river, and embracing a little bay in front of our garden, in such a way that it forms a small land-locked lake.

The promontory which parts this lagoon from the open sea is densely overgrown with a lovely red-flowered convolvulus (*Ipomaea pes-caprae*) and the curious hedgehog-grass (*Spinifex squarrosus*). There are a few fishers' huts on it, and all day long it affords a series of entertaining pictures with a constant change of scenery. Very early in the morning, to begin with, before sunrise, all the families inhabiting these huts assemble to take a bath in the river; then the horses and oxen come down to the stream. Busy washermen are often at their work there the whole day through, beating the linen on flat stones, and laying them out on the sands to dry. Numbers of fishing-boats pass out; and when, in the evening, they are drawn up on land, their large square sails stretched out to dry, the promontory has a most picturesque appearance, with its long row of motionless barks with their sails set, particularly when the evening breeze fills them out, and the setting sun, as it dips behind the waves, floods the whole coast with a glory of flaming gold, orange, and purple.

My friends informed me that this sandspit has altered in shape, and considerably in extent, in the course of years. It is, in fact, a shifting bar, such as is to be seen at the mouth of all the larger rivers of Ceylon. They bring down with them, in their wild and tumbling course through the mountains, a mass of sand and fragments of rock; then, during their slower flow through the flatter coast country, the abundant rains daily carry into them great quantities of earth and mud, so that, when these are at last deposited at the river's mouth, in a short time they form banks of considerable thickness. But these bars are constantly changing in size, form, and position, depending on the position of the channels cut by the river as branch outlets through its flat delta. Thus the main outlet of the Kalany is said to have been formerly a mile farther to the south, by the Cinnamon Gardens. The lagoons there, which now communicate with the river by little canals only, are the remains of its old branches; and the chief part of Colombo itself must be built on what was its delta. Our picturesque bar, just opposite "Whist Bungalow," has been connected with the land now by its northern and again by its southern extremity, and the wooded islet at the principal mouth has been sometimes a peninsula and sometimes an island.

The strand of this islet, as well as that of the garden of "Whist Bungalow," and to the north of it, are overgrown—like the banks of the estuary itself—with wonderful mangrove plants, and in my first walk in the immediate neighbourhood I had the pleasure of examining these characteristic and important forms of tropical vegetation with my own eyes. The trees which are included under the general name of mangroves belong to very different genera and families, as *Rhizophora*, *Sonneratia*, *Lomnitzera*, *Avicennia*, etc. But they all agree in the peculiar manner of their growth, and a typical physiognomy which results from it; their close bushy crown of leaves, generally more or less spherical, grows on a thick stem which rises from a clump of many-branched roots, rising directly above the surface of the water, often to a height of six or eight feet. Between the forks of this dome-shaped mass of roots the mud and sand accumulate which the river deposits on its shores, and particularly at its debouchure; so that a mangrove wood is highly favourable to the extension of the land.

But quantities of organic matter, corpses and fragments of dead animals and plants, also get caught among this tangle of roots and decompose there; whence a mangrove thicket is, in many parts of the

tropics, a dreaded source of dangerous fevers. But in most of the mangrove woods of Ceylon—including those of the Kalany river—this is not the case; and the various well-watered districts of the islands are by no means unhealthy, not even the stagnant lagoons of Colombo. Although I slept many nights in such spots I never had an attack of fever. This probably results from the fact that the frequent and violent storms of rain constantly renew the water in the stagnant or stream-fed pools, so that all decomposing matter is carried away before it has any injurious effects.

On the sandy shore of our garden, the mangrove is supplanted by a number of beautiful shrubs of the Asclepiadeae—*Cerbera*, *Tabernaemontana*, *Plumiera*—all characterized by large white oleander-like flowers, growing at the ends of the candelabra-like branches in great abundance, among shining tufts of large dark-green leathery leaves. Most of these Asclepiadeae yield a poisonous milky juice. They are among the commonest and most characteristic ornaments of the roadside and boggy meadows in the swampy districts in the south-west of Ceylon. Between them and on other parts of the shore, grows the elegant bamboo, like enormous bunches of feathers, as strange as it is beautiful, with its tall bending clumps.

The garden of "Whist Bungalow" itself has, under the careful and loving hand of Stipperger, become one of the most enchanting spots in the paradise of Ceylon, containing specimens of almost every important plant characteristic of the flora of the islands; thus it is not merely a pleasure-ground of blossoms and perfumes, but an instructive botanical garden on a small scale. As I wandered, intoxicated with delight, under the shade of palms and figs, of bananas and acacias, in the garden itself and in the immediate vicinity, I acquired in one morning a very good general idea of the elements composing the flora of the low country. First in rank, of course, the noble family of palms, with their stately columnar trunks—*Cocos* and Talipot, *Areca* and *Borassus*, *Caryota* and Palmyra; then the beautiful banana, with its delicate but gigantic leaves, split into feathers by the wind, and its masses of excellent golden-yellow fruit. Besides many varieties of the common banana (*Musa sapientum*), our garden boasts a fine specimen of the curious fan-shaped travellers' tree from Madagascar (*Urania speciosa*); it stands exactly where the path divides, leading to the right straight to the bungalow, and to the left to a magnificent banyan, or sacred fig-tree (*Ficus Bengalensis*). This, with its large pendant aerial roots, and the new stems formed by such as have

struck the ground, is a very extraordinary object; number of Gothic arches are formed between the root-stems which support the canopy of branches like pillars.

Other trees of various groups, as *Terminalia*, laurels, myrtles, iron-wood, bread-fruit, and others, are embraced and overgrown by gorgeous creepers, that endless variety of lianas which play so conspicuous a part in the flora of Ceylon. These belong to the most dissimilar families; for the teeming vegetation, with the favourable condition of constantly moist heat in the densely crowded woods of this land of marvellous verdure, have induced a number of highly diverse plants to become climbers and to twine round others till they reach light and air.

Among other ornaments of our lovely garden, I must particularly mention the broad-leaved *Callas* or Arnoids, and the elegant ferns, two groups of plants which play a prominent part in the undergrowth of the Ceylon flora. Among these are scattered many of the handsomest tropical foliage-plants and flowers, some indigenous to Ceylon, and some natives of other lands, particularly of South America, which thrive here to perfection. Above them rises the tall mallow (*Hibiscus*), with splendid yellow or crimson blossoms; or acacias (*Caesalpinia*), with branches of brilliant flame-coloured plumes; mighty tamarind trees, with aromatic flowers; while from their boughs hang the huge purple bells of *Thunbergia*, and *Aristolochia* with its singular brown and yellow funnels. Other families, too, display blossoms of strange size and beauty, as many madders, Rubiaceae, lilies, orchids, etc.

I will not, however, weary the reader with a vain attempt to give him anything approaching to a true idea of the intoxicating splendour of the Indian flora of Ceylon, by mere description or a dry list of names. I gained my first conception of it in the garden of "Whist Bungalow" and the neighbouring shores of the Kalany river. I will confine myself instead to remarking that, on the first morning I spent in this paradise, I wandered for hours, dazed with admiration, from one plant to another, from one clump of trees to the next, incapable of deciding to which of the endless marvels before me I should direct my particular attention. How meagre and scanty now seemed all that I had seen and admired a fortnight since in Bombay!

The animal world which peoples this Eden does not, on the whole, correspond to the extraordinary variety and beauty of the vegetable world, particularly as regards its wealth of ornamental, large, or singular

forms. In this respect the island, from all I could learn, is far behind the mainland of Hindostan and the Sunda Islands, and still more behind tropical Africa and Brazil. I must confess that I was from the first a good deal disappointed in this particular, and that my disappointment increased rather than diminished later, when I made a closer acquaintance with the fauna of the wilder parts of the island. I had hoped to see the trees and shrubs covered with monkeys and parrots, and the flowering plants swarming with butterflies and beetles of strange shapes and gaudy colouring. But neither in number nor in splendour did what I now saw, or found afterwards, answer to my highly strung expectations, and my only comfort at last was that every zoologist who had ever visited the island had been equally disappointed. Nevertheless, a closer search brings to light an abundance of interesting and remarkable objects, even for the zoologist; and, on the whole, the fauna of Ceylon is no less strange and peculiar than its flora, though it is far from being so splendid or so striking.

The vertebrate animals which most immediately attracted my attention at "Whist Bungalow" and in the neighbourhood of Colombo were the various reptiles of bright colouring and extraordinary form, particularly snakes and lizards; there was also an elegant little tree-frog (*Ixalus*), whose strange, almost bell-like croak is to be heard on all sides in the evening. Of birds, the gardens principally attract numbers of starlings and crows, wagtails and bee-eaters, and especially the honey-birds (*Nectarinia*), which here take the place of humming-birds; then, on the river-banks, there are blue-green kingfishers and white egrets. Of mammalia, by far the commonest is a charming little squirrel (*Sciurus tristriatus*), which bustles off at every turn through the trees and bushes, and is most friendly and confiding; it is of a brownish grey, with three white bands on its back.

Among the insects ants must be regarded as the most important, from the incredible numbers in which they are everywhere to be found, from the very tiniest to really gigantic species, particularly the hated termites, or white ants as they are called; but other families of the Hymenoptera—the wasps and bees—are amply represented, and the Diptera no less so—gnats and flies. On the other hand, those insect tribes which display the largest and most beautiful species, the beetles and butterflies, are not seen in such abundance as might be expected from the character of the flora. The Orthoptera, however—the locusts and grasshoppers—are very remarkable, various, and peculiar. But

for the present I will enlarge no farther on this strange world of creatures, as I shall have occasion to speak of it more fully.

The families of the Arachnidae, or spiders, here form a very interesting group of the Articulata, from the minutest mites and ticks to the monstrous bird-catching spiders and scorpions. Their near allies, the Myriapoda, are also both common and colossal; some of them being as much as a foot in length, and much dreaded for their venomous bite. I saw a few magnificent specimens on the very first morning of my stay at "Whist Bungalow," but I could devote no time to them just then; my whole attention was riveted by the marvels of the plant world.

I would gladly have devoted months and years to a thorough study of this flora, to which, as it was, I could give up only days and weeks. Besides, the Indian sun beats down from the cloudless sky with such brightness that the intense light and colour were almost too much for my unaccustomed northern eyes, and the heat would soon have been quite intolerable but that a light cool sea-breeze came to mitigate it. It was the 22nd of November, my good father's birthday; he had died at the age of ninety, just ten years since. He would on this day have completed his hundredth year, and as I inherit my love and enjoyment of nature from him—he particularly delighted in fine trees—a peculiar holiday sentiment took possession of me, and I accepted the keen and rapturous feelings of this unique moment as a special gift in honour of the day.

Such delights of nature as these have one inestimable advantage over all the pleasures of art, or even all other pleasures in life, for they never weary, and the mind that is open to them can return to them again and again with new interest and with enhanced appreciation, which ever increase as a man grows older. Thus it was that I repeated my morning walk in the paradise of the "Whist Bungalow" garden and its vicinity, sometimes on the river bank, sometimes on the sea-shore, every day while my good fortune allowed of it; and that even on the last morning I spent in Ceylon, March 18, 1882, I took leave of it with a sense of quitting Paradise lost.

My botanical knowledge was still farther increased within the next few days, as the visits which I paid to English families, to whom I had been introduced, gave me admission to several gardens in the southern suburbs of Colombo, Slave Island, and Kolpetty. Certain days linger in my memory as especially delightful which I spent in "Temple Trees

Bungalow." Temple trees is the name here given to the *Plumiera*, of which the beautiful, fragrant blossoms are everywhere strewn by the Cinghalese in the Buddhist temples, with those of the jasmine and the oleander, as sacrificial flowers before the images of Buddha. Two old and splendid specimens of the Plumiera stand, with a few gigantic *Casuarinas*, on the broad grass-plot which divides the villa named after them from the Galle Road, in Kolpetty.

The owner, Mr. Staniforth Green, invited me in the most cordial manner to spend a few days there with him, and I found him a most amiable man, taking a deep and hearty interest in the study of nature. He devotes all the leisure allowed him by his business, as owner of a great coffee-factory, to the cultivation of his beautiful garden, and to collecting and observing insects and plants. Mr. Green has for years more particularly turned his attention to the life and development of the minutest insect forms, with that patient and loving care which distinguished the naturalists of the last century, but which is growing daily more rare among the "aspiring" investigators of the present day. He has made a number of elegant observations, some of which have been published in English journals. He showed me a great number of most carefully preserved curiosities, and made me a present of some of the most interesting. His nephew also, who assists him in his business, shares these favourite pursuits of his leisure hours, and showed me a very pretty collection of insects. He gave me, among other things, several specimens of the huge bird-catching spider (*Mygale*), which he himself had frequently seen in pursuit of small birds—*Nectarinia*—and the small gecko (*Platydactylus*).

Mr. Green's garden, which contains some old and noble specimens of *Caesalpinia*—Flamboyant, as it is called here—fine Yuccas (Adam's needle), and reed-palms (*Calamus*), adjoins on the east a pretty bay of the large lagoon lying between Kolpetty, Slave Island, and the Fort. One fine evening we rowed in a canoe across the mirror-like pool, covered with magnificent white and red water-lilies, to the house of Mr. William Ferguson. This friendly old gentleman, who for many years has filled the post of Inspector of Roads, also gives up his spare time to zoological and botanical studies, and has enriched these branches of science by many valuable contributions. I am indebted to him for much interesting information. He must not be mistaken for his brother, the Ceylon Commissioner, who edits and publishes the most influential paper in the island, the *Ceylon Observer*. This paper is conducted by him

in the spirit of stern and gloomy orthodoxy and conservative rigidity which unfortunately characterizes so many professedly liberal English journals.

Another day, Mr. Green took me to the Colombo Museum, a handsome two-storied building in Cinnamon Gardens, intended for collections of all the literary, historical, and natural treasures of the island. The ground floor contains on one side a fine library, and on the other the antiquities, ancient inscriptions, sculptures, coins, ethnographical collections, etc. In the upper story is a rich collection of natural history, particularly of dessicated and stuffed animals, exclusively Cinghalese. Insects are remarkably well represented, being the special study of the director, Dr. Haly, who was absent at the time; and next to these, birds and reptiles. In most departments of the lower animals, however, much remains to be done. Still, the Colombo Museum, even now, affords a good general view of the rich and peculiar fauna of the island. The zoologist who comes here direct from Europe will, no doubt, find the state of a large part of the collection unsatisfactory; the stuffed and desiccated specimens are in many cases badly prepared, mildewed, decayed, etc. But only a newcomer will criticize this, in his ignorance of the extreme difficulties that stand in the way of the formation and maintenance of any collection of this kind in the damp hothouse climate of Ceylon. It was my fate ere long to have some bitter experiences of this.

Just as all kinds of leather and paper work mildew and drop to pieces, and everything made of iron and steel gets covered with rust in spite of the greatest care, so the chitinous bodies of insects and the skins of vertebrate animals sooner or later perish under the combined influence of a constant temperature of 25° to 30° centigrade, and an amount of moisture in the air which quite beats all our European powers of conception. Still worse in many cases are the combined attacks of myriads of various insects: ants both black and red, some two and three times as large as ours, others about the same size, and others again almost microscopically small; white ants or termites, the worst foes of all; gigantic cockroaches (*Blatta*), paper-mites (*Psocus*), museum weevils, and such small folk, seem to vie with each other in the work of destruction. To protect a collection against the attacks of these minute and innumerable enemies is, in Ceylon, not merely difficult, but in some cases impossible; I myself, in spite of every precaution, lost a large portion of my dried collections.

The effect of the tropical heat, at only seven degrees from the equator, and combined with the excessive humidity, on our European manufactured articles, as well as on the natural products of the island, is a thing of which we at home can form no idea. After the first delightful days of seeing and wondering were over at "Whist Bungalow," I set to work to unpack my paraphernalia and instruments from the trunks and cases; and in what a state did I find them! In every scientific instrument those portions that were made of steel or iron were rusted; not a screw would run smoothly. All the books, all the paper, all the articles made of leather, were damp and mildewed; and—what went most to my soul—that famous black dress-coat, which plays as important a part in English society here as it does at home in Europe, was, when I took it out of its box—white! It, and all my cloth clothes, was covered with layers of delicate forms of fungus, which only disappeared after many days of exposure to the sun. For this reason, in every European house in Colombo, it is the special duty of a servant, known as the "clothes-boy," to air the clothes, beds, linen, papers, etc., every day in the sun, and keep them free from mould.

Worse even than this was it to find that a new photographic camera, made by one of the first firms in Berlin, of what professed to be "the best seasoned wood," was absolutely useless, every part of it having warped. The lids of almost all the wooden cases had sprung; the empty envelopes were all stuck down; various boxes of powdered gum arabic contained a stiff glutinous mess; while in a tin of peppermint lozenges I found nothing left but syrup. Stranger still was the condition of the boxes of effervescent powders. The tartaric acid had disappeared from all the blue papers, and the white ones, instead of carbonate of soda, contained sodic tartrate; the tartaric acid had melted, had mixed with sodium and released the carbonic acid.

Thus, even before they were unpacked the damp heat had destroyed a quantity of things which we never think of as destructible. And yet the four months I spent in Ceylon fell during the dry season, as it is called, of the north-east monsoon, which blows from November till April. What must the state of things be in the rainy season, from May till November, when the cloud-laden south-west monsoon is blowing? My friends, indeed, told me that they gave up all idea then of keeping anything dry, and that the water trickled down the inside walls.

It seems self-evident that such a hot-house climate, so utterly unlike ours in Central Europe, must have a very different effect on any human

frame accustomed to more temperate conditions; and, in fact, the struggle with the inimical climate is everywhere, every day and at all times, a theme of conversation. I must confess I was somewhat anxious as to how I myself should endure it. During my first week in Colombo, I began to feel a great deal of the inconvenience and lassitude which are inseparable from it; particularly during the sultry nights, when the thermometer rarely fell below 25° centigrade, never down to 23°, while during the day it often rose to 30° or 33° in the shade (from 86° to 90° Fahrenheit). However, it was more endurable the second week than it had been the first, and later, not even on the south coast at not much above 5° N. lat., I never suffered so much as during those first sleepless nights and exhausting days in Colombo.

Under these conditions, of course, the frequent baths which, to Europeans and natives alike, are the greatest refreshment of the day, are quite indispensable. I commonly took two: one on rising at about six, and a second before the meal here called breakfast—in reality a luncheon—at about eleven. When in the south, I commonly indulged in a third bath in the evening, before dinner, at seven or half-past. I also at once adopted the usual garb of Europeans here, made of thin white cotton stuffs, a comfortable gauze jersey under a light loose coat. Precious above all as a constant head-covering was a Calcutta hat, or sola hemlet,* which I had bought in Port Said for three francs. This incomparable helmet is made of the very light and tough wood of the *sola* or *shola* plant, resembling elder-pith; it is constructed with a double dome-like crown and a deep brim, like a sou'wester, completely protecting the nape and neck. The brim is lined round the head with a strip of waxed linen, to which a series of separate discs are attached in such a way as that these only rest against the head; the air can pass between them freely, and the temperature inside the hat remains low.

By careful use of these and other precautions I remained perfectly well throughout my stay in Ceylon, although—or perhaps because—I took a great deal of exercise, and was almost always out of doors, even in the noontide heat. It is true I lived more regularly and temperately than is common among the Europeans there, and consumed not half the amount of meals and of liquor which the English consider indispensable. Indeed, when, after a few years' residence here, they generally suffer

* These are made of *shola*, which is the soft pitch-like wood of a leguminous plant—*Aeschynomene Aspera*.

from disorders of the stomach and liver, I must think that the fault lies less in the hot climate than in the want of exercise, on the one hand, and the unnecessary amount of food consumed on the other; for the residents often eat and drink twice or thrice as much as is necessary for health—heavy rich food and fiery spirituous liquors. In this respect they display a conspicuous contrast to the extremely simple and frugal natives, who, for the most part, live chiefly on rice, with curry and a little fruit at most, and who drink water exclusively, or a little palm-wine.

In Ceylon, as in most parts of India, the daily order of meals among Europeans is as follows:—In the morning, immediately on rising, tea and biscuits, bread, eggs or marmalade, banana, mangos, pine-apples, and other fruit. At ten comes breakfast—according to German notions a complete dinner with three or four courses; fish, roast fowls, beef-steaks, and more especially curry and rice, the national Indian dish, are never absent. This curry is prepared in many ways from spices of various kinds, with small pieces of vegetables or meat, making a highly flavoured compound. Tiffin at one o'clock is a third meal of tea or beer with cold meat, bread, butter, and jam. Many persons take tea or coffee again at three or four o'clock; and finally, at half-past seven or eight, comes the great event of the day: dinner of four to six courses, like a great dinner in Europe; soup, fish, several dishes of meat, curry and rice again, and various sweet dishes and fruits. With this several kinds of wine are drunk—sherry, claret, and champagne, or strong beer imported from England; latterly, however, the light and far wholesomer Vienna beer has been introduced. In many houses some portion of these superabundant meals is dispensed with; but in general the living in India must be condemned as too luxurious and too rich, particularly if we compare it with the simple and frugal diet common in the south of Europe. This is quite the view of many of the older English residents who are themselves exceptions to the rule, and, living very simply, have nevertheless spent twenty or thirty years in the tropics in unbroken good health; as, for instance, Dr. Thwaites, formerly director of the botanical gardens at Peradenia.

CHAPTER V

KADUWELLA

THE crowd of new, grand, and delightful impressions which rushed upon me during my first week in Ceylon culminated in a beautiful excursion arranged by my friends for November 27th, to Kaduwella. It was my first Sunday in the island, and although all the various pleasures of the foregoing week-days had made of each a day of rejoicing, my holiday mood was still farther raised by the incidents of this first Sunday. This expedition to Kaduwella was my first longer excursion in the neighbourhood of Colombo, and as the scenery which I here saw for the first time agrees in all its essential and permanent characteristics with most of the low country of the south-west coast, I will attempt a brief description of it in this place.

Kaduwella is a Cinghalese village on the left or southern bank of the Kalany river, at about ten miles (English) from "Whist Bungalow." An excellent road, which goes on to Avisavella and Fort Ruanvella, runs sometimes close to the wooded shore and sometimes at a little distance above it, to cut off the numerous windings of the river. Like all the roads in the island which are much used, this is admirably kept up; and this is the more noteworthy because the frequent and violent rains are constantly washing down large quantities of soil, and make it very difficult to keep the roads in good order. But the English Government, here as in all its colonies, considers, very justly, that the maintenance and construction of easy communication is one of its first and most important duties; and it is a proof of the great gift of the English for

colonization that they spare neither trouble nor cost in carrying out such undertakings, even under the greatest difficulties in the character of the country, aggravated by the tropical climate.

My hosts of "Whist Bungalow" and some German fellow-countrymen, who were at that time living in the neighbouring bungalow of Elie House—for some time the residence of Sir Emerson Tennent—had made every preparation for our gastronomical enjoyment on this excursion. Everything, solid and fluid, that could be desired for our elegant picnic breakfast, together with our guns and ammunition, and phials and tin boxes for what we might collect, were all packed into the light open one-horse conveyances which every European owns. They are usually drawn by a brisk Burmese pony or a stronger beast of Australian breed; indeed, almost all the riding and carriage horses in the island are imported from the Peninsula or from Australia, for horse-breeding does not succeed in Ceylon, and European horses suffer from the climate and soon become useless. The little Burmese ponies go at a capital pace, though they have not much staying power; about ten miles is commonly as much as they can do. The drivers are generally black Tamils in a white jacket with a red turban; they run behind the vehicle with extraordinary endurance, or stand up from time to time on the step. They are obliged to keep up an incessant shouting, for the Cinghalese themselves—particularly the old folks—as well as their oxen and dogs, manifest a decided predilection for being run over, in preference to moving out of the way.

We left "Whist Bungalow" before sunrise, and drove through the last houses of Mutwal and the Parade beyond, out into the green and smiling country which spreads to the foot of the hills; here jungle, there park-like meadow-land and rice-fields. The outskirts of Colombo, as of all the towns in Ceylon, insensibly dwindle into long scattered hamlets, extending for miles; and as the isolated native huts which compose them are generally at wide intervals, each surrounded by its own plot of garden, field, or grove, the frontier line of each village is often difficult to draw and a purely imaginary boundary. In the more densely populated and highly cultivated districts of the south-west coast, there is in fact no visible division, and it might be said that the whole low country between Colombo and Matura, the south-western point of the island, is covered by one endless village of Indian huts and fruit gardens, jungle and cocoa-nut groves. The same features recur throughout this Eden-like garden land; low brown mud huts, shaded by bread-fruit and mango

trees, Cocos and Areca palms, and embowered in pisang groves made beautiful with the spreading leaves of the caladium and Ricinus, the graceful papaw, clumps of manihot and other useful plants. The indolent Cinghalese lie stretched on benches before their open huts, happy in their idleness, contemplating the ever green surroundings, or busy in weeding out the native population of their long black hair. Naked children play in the road, or hunt the butterflies and lizards which make it gay.

At certain hours of the day, on the more frequented roads, numbers of ox-carts are to be met, small ones with one or larger ones with two beasts; these constitute the chief—indeed almost the sole—vehicles for transport and communication used by the natives. The oxen are all of the kind known as the zebu (*Bos indicus*), and have a hump on their shoulders. The zebu, however, like the European bull, has many varieties; one small breed can run fast and steadily. The natives rarely use horses, and there are no asses in the island. It swarms, however, with dogs, in front of every hut—pariah dogs, as they are called—all of the same breed, and seeming to betray their descent from the wild jackal by their form, colour, and behaviour. Everywhere, too, we see small black pigs (*Sus indicus*), and not unfrequently lean leggy goats, more rarely sheep. Fowls are plentiful, ducks and geese less common. These are the simple and invariable elements that constitute the domestic scenery of south-west Ceylon. But these elements are mixed with such fascinating irregularity and in such endless variety, they are so gorgeously lighted up and coloured by the tropical sunshine, the neighbouring sea or river gives them such restful freshness, and the forest background with the distant blue mountains beyond lends them so much poetic sentiment, that it is impossible to weary of enjoying them; and the landscape painter may find here as endless a succession of subjects as the *genre* painter—beautiful subjects, almost unknown in our exhibitions.

One particularly delightful feature of the Ceylon coast is the insensible transition from garden to forest land, from culture to the wilderness. Often I have fancied myself in some beautiful wild spot, with tall trees on all sides, wreathed and overgrown with creepers; but a hut shrouded under the branches of a bread-fruit tree, a dog or a pig trotting out of the brushwood, children at play and hiding under the caladium leaves, have betrayed the fact that I was in a native garden. And, on the other hand, the true forest which lies close at hand, with its mingled species of the most dissimilar tropical trees, with its orchids, cloves,

lilies, mallows, and other gorgeous flowering plants, is so full of variety and beauty that it is easy to fancy it a lovely garden. This peculiar harmony between nature and cultivation characterizes even the human accessories of this garden-wilderness, for the simplicity of their garments and dwellings is so complete that they answer perfectly to the description given of true savages, though they are descended from a long civilized race.

All these scenes are doubly attractive and picturesque in the cool light of early day, when the sun strikes level beams through the trees, casting long shadows from the slender trunks of the palms, and breaking into a thousand flecks of light on the huge torn leaves of the banana trees.

At the time of my visit, during the north-east monsoon, the bright morning hours were always deliciously cool and enjoyable, with a cloudless sky and a fresh sea-breeze, though the thermometer rarely fell below 23° or 22°: it was not till between nine and ten that the heat began to be oppressive and clouds gathered, which usually discharged themselves in a violent shower in the afternoon. When this was over, by about four or five, the evening hours again seemed doubly glorious, all the more so because the setting sun fired the western horizon with gold, and flooded the clouds with a glow of hues that defy all description. It happened, however, that the weather was by no means so regular as usual that season, but in various ways somewhat abnormal. On the whole, the weather favoured me throughout my journey, and very few days were spoilt by persistent rain beginning so early in the day as to interfere with the work or the excursion I had planned.

After a most amusing drive of two hours we reached the village of Kaduwella, very picturesquely situated on a sudden bend of the Kalany river. On an elevated point, shaded by noble trees, stands the "rest-house," where we were to stop and take out the horses, looking pretty and inviting. "Rest-houses" is the name given in Ceylon, as in India, to the houses which, in the absence of inns, the Government has provided for the shelter of travellers, and which are under its supervision. There are but three towns in all Ceylon that can boast of hotels—Colombo, Galle, and Kandy. The natives need them not. The European traveller must therefore depend entirely on the hospitality of European residents, where there are any, or on the Government "rest-houses." These, in fact, supply his principal needs. The host, who is a Government servant and known as the "rest-house keeper," is bound to let the traveller have

a room with a bed in it for a certain fixed price—generally a rupee, or two shillings—and, if required, he must also provide the barest necessaries by way of food. This varies considerably in price, and so, of course, do the capacities of the host himself. In the south-west corner of the island, where I travelled most, I found them generally willing and efficient; especially in Belligam, where I fixed my laboratory for six weeks at the "rest-house." In the interior, on the contrary, and particularly in the north and east of the island, the "rest-houses" are bad and very dear. At Neuera Ellia, for instance, I had to pay a quarter of a rupee a-piece for eggs, and half a rupee—a shilling—for each cup of coffee. The "rest-house" of Kaduwella, the first I had occasion to enter, was very humble and small, and as we had brought our own provisions, it afforded us only chairs to sit on, fire and water for cooking, and a pleasant shelter in its airy verandah against sun and rain; and for this we paid according to the tariff. Nothing but death is to be had for nothing in India.

As soon as we arrived we set out with our guns to make the most of the lovely morning hours. To the south of the river and just behind the village rises an undulating hill, over which the shooting party dispersed. The lower slopes are covered with meadows and rice-fields carefully irrigated by ditches and canals, and little pools into which the cuttings open. The higher portion, a rolling, hilly country of from one hundred to three hundred feet high, is overgrown with the dense brushwood and undergrowth here universally known as jungle. It was here that I first became more closely acquainted with this characteristic feature of the landscape, which throughout the island takes possession of the soil wherever cultivation ceases. Jungle is not, in fact, the "forest primaeval," the wilderness untrodden of man. This has no existence in Ceylon, excepting in a very few spots and those of very small extent, but it answers to our conception of it in so far as in its fullest development it is to all intents and purposes a forest, a dense and impenetrable thicket of trees and shrubs. These have grown up without any kind of order, and in such wild confusion—so tangled with creepers and climbers, with parasitic ferns, orchids, and other hangers-on, every gap closed with a compact network of bush and brake—that it is quite impossible to unravel the knot and distinguish the closely matted stems.

The first time I attempted to make my way into such a jungle, I soon convinced myself that when once well grown, it is absolutely impenetrable without axe and fire. I spent a good hour in working through a few yards, and then retreated, completely discouraged from

any further efforts; stung by mosquitoes, bitten by ants, my clothes torn, my arms and legs bleeding, wounded by the thousand thorns and pines by which the *Calamus*, climbing *Hibiscus*, *Euphorbia*, *Lantana*, and a legion of jungle shrubs bar the way into their mysterious labyrinth. However, even this failure was not in vain, for it taught me not only the character of the jungle as a whole, and particularly the beauty of its trees and climbers, but I saw a quantity of individual forms of plants and animals of the highest interest. I saw the magnificent *Gloriosa superba*, the poisonous climbing lily of Ceylon, with its golden-red crown; the thorny *Hibiscus radiatus*, with large sulphur-coloured blossoms, purple-stained in the cup: around me fluttered huge black butterflies with blood-red spots on their swallow-tailed wings, metallic beetles, etc.

But what delighted me most was that here, in the first jungle I invaded in Ceylon, I met with the two most characteristic natives of these wilds in the higher ranks of animal life: parrots and monkeys. A flock of green parrots rose screaming from a tall tree that towered above the jungle, as soon as they caught sight of my gun, and at the same moment a troop of large black monkeys scampered off into the thicket, snarling and squealing. I did not succeed in shooting a specimen of either; they seemed perfectly aware of the use and effect of firearms. I was consoled, however, by finding that the first shot I fired had killed an enormous lizard above six feet long, the singular *Hydrosaurus salvator*, a species greatly dreaded by the superstitious natives. The huge crocodile-like reptile was sunning itself on the edge of a ditch, and my first shot hit him so neatly in the head that he was instantly dead; if they are shot in any other part these animals, which are extremely tenacious of life, usually plunge into the water and disappear, and they can defend themselves so vigorously with their powerful tail, which is covered with plate armour and has a sharp ridge, that a blow often inflicts a dangerous wound, or even breaks a man's leg.

After wading through several water-courses, we went through a scattered plantation and up a charming avenue to a wooded hill, on which is a famous Buddhist temple, the goal of many pilgrims. We found here a number of huts in groups under the thick shade between the columnar trunks of gigantic trees (*Terminalia* and *Sapindus*), and looking exactly like children's toys. Farther on, we came to a sun-lighted clearing where gaudy butterflies and birds were flying about in numbers, particularly some fine woodpeckers and wood-pigeons. At last a flight of steps between talipot trees led us up to the temple, which is most picturesquely

placed in the middle of the wood, under the shelter of a fine mass of granite. A large natural cave, which seems to have been artificially enlarged, extends far into the side of the overhanging cliff. The great pillared hall of the temple, which has six round arches on the front and three on the narrower gable side, is so constructed that the bare rock not only forms the back wall of the temple but has supplied the material for the colossal figure of Buddha reposing, which is supported against it. This image of the god is identically the same in every Buddhist temple which I visited in Ceylon, and so are the uniform painted decorations on the temple walls, which invariably represent scenes from his life on earth. These, with their stiff drawing and simple harsh colouring, yellow, brown, and red for the most part, strongly recall the ancient Egyptian wall-paintings, though in detail they are as different as possible. The reclining figure of Buddha, leaning on his left arm and dressed in a yellow robe, always wears the same inane and indifferent expression, resembling the fixed smile of the old Aeginetan statues. Hard by most of the Buddhist temples stands a dagoba, as it is called, a bell-shaped dome without any opening, which is always supposed to contain some relic of the god. The size of these dagobas varies greatly, from that of a large church-bell to the circumference of the dome of St. Peter's at Rome. Near the dagoba an ancient and spreading bo-gaha commonly grows, a banyan or sacred fig (*Ficus religiosa*). In many places in Ceylon these Buddha-trees, with their huge trunks, fantastically twisted roots and enormous expanse of leafy top, are the most ornamental feature of the picturesque temple precincts; their pointed heart-shaped leaves, with their long and slender leaf-stalks, are in perpetual whispering motion like those of the aspen.

A flight of steps cut in the rock behind the temple leads to the top of the cliff, whence there is a pretty view over the neighbouring hilly country and across the plain beyond to the river. The immediate neighbourhood is planted with fine groups of bananas and palms, and behind them the impenetrable wood and undergrowth of climbers forms a mysterious background quite in keeping with the sanctity of the spot. In the foreground, on a stone near the steps, squatted a bald old priest in his yellow robe, a most appropriate accessory figure. While I was making a sketch in water-colour a Cinghalese boy clambered to the top of a cocoa-nut tree and fetched me down a few of the golden-brown nuts. I found the cool sub-acid liquid inside—cocoa-nut milk as it is called—extremely refreshing under the mid-day heat; I had never tasted it before.

The path by which we returned from the cave-temple to Kaduwella led us through another part of the wood, which again showed me a number of new insects, birds, and plants; among others some noble teak trees (*Tectonia grandis*), as well as a few gigantic specimens of the cactus-like *Euphorbia antiquorum*, with its leafless, angular blue-green stems. The last portion of the way, across boggy meadow-land, was tremendously hot, and on our return the first thing we did was to take a swim in the river—a delightful refreshment, after which we enjoyed our jolly breakfast with increased zest. In the afternoon I, with some others of the party, crossed the river in a boat, and took a short walk in the wood on the right or northern bank of the river. Here again, I saw a quantity of vegetable forms hitherto unknown to me, particularly Aroids and Cannas, and wondered afresh at the extraordinary wealth of the flora, which has here assembled all its most wonderful and beautiful productions. On the very edge of the water great clumps of bamboo, mixed with *Terminalia*, *Cedrela*, and mangroves, were the principal growth. I shot a few green pigeons and a fine kingfisher, twice as large and as handsome as our European species.

Late in the evening we returned home, loaded with zoological, botanical, and artistic treasures. After that I spent many delightful days among the jungle and river scenery of Ceylon; some of it more beautiful, no doubt, than that of Kaduwella. But it often happens in life that the first impression of new and strange objects remains by far the strongest and deepest, never to be dimmed by any later experience of the same kind, and to me the first day I saw the jungle at Kaduwella is one never to be forgotten.

CHAPTER VI

PERADENIA

In the central province of Ceylon, and at a height of fifteen hundred feet above the sea, stands the capital, formerly the residence of the kings of the island, the famous town of Kandy; and only a few miles away from it is a small town, which was also, for a short time, a royal residence five centuries ago. At this place the English Government made a botanical garden in 1819, and Dr. Gardner was the first director. His successor, the late Dr. Thwaites, the very meritorious compiler of the first "Flora Zeylanica," for thirty years did all he could to improve and carry out the purpose of this garden in a manner worthy of its advantages of climate and position. When he retired a year or two before his death, Dr. Henry Trimen was appointed director; and from him, immediately on my arrival, I received a most friendly invitation. I accepted it all the more gladly because in Europe I had already read and heard much of the marvels of plant-life at Peradenia. Nor were my high anticipations disappointed. If Ceylon is a paradise for every botanist and lover of flowers, then Peradenia deserves to be called the very heart of Paradise.

Peradenia and Kandy are connected with Colombo by a railway, the first made in Ceylon; the journey occupying from first to last between four and five hours. I started from Colombo at seven in the morning of the 4th of December, and reached Peradenia at about eleven. Like all Europeans in Ceylon, I found I must travel in the first-class—not *noblesse* but whiteness *oblige*. The second-class is used only by the yellow and tawny burgers and half-breeds, the descendants of the Portuguese and

Dutch; the third-class, of course, carries the natives, the dark Cinghalese and the nearly black Tamils. The only wonder to me is that there is not a fourth for these last, and a fifth for the despised low-caste Hindoos. The natives are always great patrons of railway travelling; it is the only pleasure on which they are prepared to spend money, all the more so as it is a cheap one. Directly after the railway was opened, the natives began travelling by the wonderful road every day and all day long, for the mere pleasure of it. The carriages are airy and light; the first-class well provided with protection against the heat, with wide eaves and venetian blinds. The engine-drivers and the guards, in their white clothes with sola helmets, are Englishmen. The line is worked with order and punctuality, like all the English railways.

The first two hours' ride from Colombo to Peradenia lies across a level country, most of it covered with marshy jungle, varied by rice-fields and water-meadows. In these herds of black buffaloes lie half in the water, while graceful white herons pick the insects off their backs; farther on the line gradually approaches the hills, and after Rambukkana station begins to work upwards. For an hour, between this and the next station Kaduganawa, the line is in point of scenery one of the most beautiful I have ever seen. The road winds with many zigzags up the steep northern face of a vast basin or *cirque*. At first the eye is fascinated by the changing aspect of the immediate foreground: immense blocks of gneiss stand up amid the luxuriant masses of dense forest which fill the ravines on each side; creepers of the loveliest species fling themselves from one tree-top to the next, as they tower above the undergrowth; enchanting little cascades tumble down the cliffs, and close by the rail-road we often come upon the old high-road from Colombo to Kandy, formerly so busy a scene, which was constructed by the English Government, to enable them to keep possession of the ancient capital.

Further on we command wider views, now of the vast park-like valley which grows below us as we mount higher, and now of the lofty blue mountain range which stands up calm and proud beyond its southern wall. Although the forms of the higher hills are monotonous and not particularly picturesque—for the most part low, undulating shoulders of granite and gneiss—still a few more prominent peaks rise conspicuous; as, for instance, the curious table rock known as the "Bible Rock." "Sensation Rock," as it is called, is one of the most striking and impressive features of the scenery. The railway, after passing through several tunnels, here runs under overhanging rocks along the very edge of a

cliff, with a fall of from twelve to fourteen hundred feet, almost perpendicular, into the verdurous abyss below. Dashing waterfalls come foaming down from the mountain wall on the left, rush under the bridges over which the line is carried, and, throwing themselves with a mighty leap into mid air, are lost in mist before they reach the bottom of the gorge, making floating rainbows where the sun falls upon them.

The green depths below, and the valley at our feet, are covered partly with jungle and partly with cultivation; scattered huts, gardens, and terraced rice-fields can be discerned. The lofty head of the talipot palm (*Corypha umbraculifera*), the proud queen of the tribe in Ceylon, towers above the scrub on every side. Its trunk is perfectly straight and white, like a slender marble column, and often more than a hundred feet high. Each of the fans that compose its crown of leaves covers a semicircle of from twelve to sixteen feet radius, a surface of 150 to 200 square feet; and they, like every part of the plant, have their uses, particularly for thatching roofs; but they are more famous because they were formerly used exclusively instead of paper by the Cinghalese, and even now often serve this purpose. The ancient Puskola manuscripts in the Buddha monasteries are all written with an iron stylus on this "*Ola*" paper, made of narrow strips of talipot leaves boiled and then dried. The proud talipot palm flowers but once in its life, usually between its fiftieth and eightieth year. The tall pyramidal spike of bloom rises immediately above the sheaf of leaves to a height of thirty or forty feet, and is composed of myriads of small yellowish-white blossoms; as soon as the nuts are ripe the tree dies. By a happy accident an unusual number of talipot palms were in flower at the time of my visit; I counted sixty between Rambukkana and Kaduganawa, and above a hundred in my whole journey. Excursions are frequently made to this point from Colombo, to see the strange and magnificent scene.

The railroad, like the old high-road, is at its highest level above the sea at the Kaduganawa pass, and a light-house-shaped column stands here in memory of the engineer of the carriage road, Captain Dawson. We here are on the dividing ridge of two watersheds. All the hundred little streams which we have hitherto passed, threading their silver way through the velvet verdure of the valley, flow either to the Kelany Ganga or to the Maha-Oya, both reaching the sea on the western coast. The brooks which tumble from the eastern shoulder of Kaduganawa all join the Mahavelli Ganga, which flows southwards not far below. This is the largest river in the island, being about 134 miles long, and

it enters the sea on the east coast, near Trincomalee. The railway runs along its banks, which are crowded with plantations of sugar-cane, and in a quarter of an hour from the pass we reach Peradenia, the last station before Kandy.

When I arrived, at about eleven o'clock, I found Dr. Trimen waiting for me; he welcomed me most kindly, and drove me in his carriage to the Botanical Garden, which is about a mile distant. Immediately in front of it, the foaming river is spanned by a fine bridge, built of satin wood, in one arch of more than eight hundred feet across. Under ordinary circumstances, the crown of the bridge is seventy feet above the level of the river, but an idea may be formed of the enormous mass of water which collects after heavy rains in the water-courses of Ceylon, when we learn that the river rises here sometimes as much as fifty or sixty feet, leaving no more than ten feet between the surface and the arch of the bridge.

The entrance to the garden is through a fine avenue of old india-rubber trees (*Ficus elastica*). This is the same as the Indian species, of which the milky juice when inspissated become caoutchouc, and of which young plants are frequently grown in sitting-rooms in our cold northern climate, for the sake of the bright polished green of its oval leathery leaves. But while with us these indiarubber plants are greatly admired when their inch-thick stems reach the ceiling, and their rare branches bear fifty leaves, more or less, in the hot moisture of their native land they attain the size of a noble forest tree, worthy to compare with our oaks. An enormous crown of thousands of leaves growing on horizontal boughs, spreading forty to fifty feet on every side, covers a surface as wide as a good-sized mansion, and the base of the trunk throws out a circle of roots often from one hundred to two hundred feet in diameter, more than the whole height of the tree. These very remarkable roots generally consist of twenty or thirty main roots, thrown out from strongly marked ribs in the lower part of the trunk, and spreading like huge creeping snakes over the surface of the soil. The indiarubber tree is indeed called the "Snake tree" by the natives, and has been compared by poets to Laocoon entwined by serpents. Very often, however, the roots grow up from the ground like strong upright poles, and so form stout props, enabling the parent tree to defy all storms unmoved. The spaces between these props form perfect little rooms or sentry-boxes, in which a man can stand upright and be hidden. These pillar-roots are developed here in many other gigantic trees of very different families.

I had scarcely exhausted my surprise at this avenue of snake trees, when, exactly in the middle, beyond the entrance of the gate, my eye was caught by another wonderful sight. An immense bouquet there greets the visitor—a clump of all the palms indigenous to the island together with many foreign members of this noblest growth of the tropics; all wreathed with flowering creepers, and their trunks covered with graceful parasitical ferns. Another, but even larger and finer group of palms, stood further on at the end of the entrance avenue, and was, moreover, surrounded by a splendid parterre of flowering-plants. The path here divided, that to the left leading to the director's bungalow, situated on a slight rise. This inviting home is, like most of the villa residences in Ceylon, a low one-storied building, surrounded by an airy verandah, with a projecting roof supported on light white columns. Both pillars and roof are covered with garlands of the loveliest climbers; large-flowered orchids, fragrant vanilla, splendid fuchsias, and other brilliant blossoms, and a choice collection of flowering plants and ferns decorate the beds which lie near the house. Above it wave the shadowy boughs of the finest Indian trees, and numbers of butterflies and chafers, lizards and birds animate the beautiful spot. I was especially delighted with the small barred squirrels (*Sciurus tristriatus*), which looked particularly pretty here, though they are common and very tame in all the gardens of Ceylon.

As the bungalow stands on the highest point of the gardens, and a broad velvet lawn slopes down from it, the open hall of the verandah commands a view of a large portion of the garden, with a few of the finest groups, as well as the belt of tall trees which enclose the planted land. Beyond this park-like ground rise the wooded heads of the mountains which guard the basin of Peradenia. The beautiful Mahavelli river flows round the garden in a wide reach, and divides it from the hill country. Thus it lies in a horseshoe-shaped peninsula; on the landward side, where it opens into the valley of Kandy, it is effectually protected by a high and impenetrable thicket of bamboo, mixed with a *chevaux-de-frise* of thorny rattan palms and other creepers. The climate, too, is extraordinarily favourable to vegetation; at a height of fifteen hundred feet above the sea, the tropical heat of the mountain basin, combined with the heavy rainfall on the neighbouring mountains, make of Peradenia an admirable natural forcing-house, and it can easily be conceived how lavishly the tropical flora here displays its wonderful productive powers.

My first walk through the garden in the company of the accomplished director convinced me that this was in fact the case, and although I had heard and read much of the charms of the prodigal vegetation of the tropics, and longed and dreamed of seeing them, still the actual enjoyment of the fabulous reality far exceeded my highest expectations, even after I had already made acquaintance with the more conspicuous forms of this southern flora at and near Colombo and Bombay. During the four days I was so happy as to spend at Peradenia I made greater strides in my purview of life and nature in the vegetable world than I could have made at home by the most diligent study in so many months. Indeed, when, two months later, I visited Peradenia for the second—and, alas! for the last—time and spent three more happy days in that paradise, it enchanted me to the full as much when I quitted it as it had at the first glance; only I saw it with wider understanding and increased knowledge. I cannot sufficiently thank my excellent friend Dr. Trimen for his kind hospitality and valuable instruction; the seven days I spent in his delightful bungalow were indeed to me seven days of creation.

At the time when I was at Peradenia another English botanist was staying there, Dr. Marshall Ward, under his official title "Royal Cryptogamist." He had studied chiefly in Germany, and had been sent out to Ceylon two years previously to investigate the terrible coffee-leaf disease —a fungus attacking the leaves of the coffee shrub—which has raged now for many years with increasing severity in the coffee-plantations of Ceylon, destroying this valuable produce throughout extensive tracts and wasting enormous sums of the nation's money. Dr. Ward instituted a series of interesting observations and experiments on this fungus, and elaborately investigated this microscopic structure (*Hemileja vastatrix*), which somewhat resembles rust in corn; he has not, however, succeeded in finding any effectual cure. As the reward of his labours he has been sharply attacked in the papers, particularly by some of the coffee growers; as though any one of the hundreds of botanists who have turned their most careful attention to the investigation of such fungus-epidemics had always succeeded, even with the most complete knowledge of the malady, in prescribing a remedy. On the contrary, it is well known that this is scarcely ever the case. Of all the foolish ideas which we hear repeated every day in our "educated circles," undoubtedly one of the most foolish is that "there is a remedy for every disease." The experienced physician or naturalist who is familiar with the facts, knows that

the remedies are very few, and only marvels when he finds a specific against any one disease—such as quinine in cases of fever.

It would carry me too far, and only fatigue the reader, if I were to venture on an attempt, vain without the help of pictures, to give him any idea of the botanical paradise of Peradenia; indeed, the numerous sketches, in pencil and colour, which I made there would be no adequate help. I must therefore confine myself to a few general remarks and descriptions of the more important and typical plants. Peradenia differs widely in one respect from most of our European botanical gardens, for, instead of displaying the plants in formal beds, drawn up like soldiers in lines and companies, the whole plan of the garden, which is about a hundred and fifty acres in extent, is park-like and calculated for pleasing and characteristic effect as well as for scientific instruction. The principal groups of trees, with such families of plants as are allied to them, are elegantly arranged on fine lawns, and good paths lead from one to another. The less ornamental nursery-beds are placed in a less conspicuous situation, with plots for growing and selecting useful plants. Almost every kind of useful vegetable of the tropics and of both hemispheres is here represented, and seeds, fruits, and cuttings are distributed to planters and gardeners throughout the island. The garden has thus for several years vindicated its practical utility, and has done good service both as a centre for botanical observations and a garden of acclimatization.

The extraordinarily favourable climate and position of Peradenia especially fit it, however, for more extensive use from a scientific point of view as a botanical station. In the same way as our young zoologists find the recently established zoological stations on the sea-coast (at Naples, Roscoff, Brighton, Trieste, etc.) of inestimable value for their deeper scientific studies and experiments, a year's residence at such a botanical station as Peradenia would give a young botanist more experience and work than he could obtain in ten years under the various unfavourable conditions at home. Hitherto, less has been done in the tropical zone than elsewhere for such establishments for study and experiment, though they would be exceptionally beneficial. If the English Government would establish and maintain such a station for botany at Peradenia, and one for zoology at Galle—in the charming bungalow, for instance, belonging to Captain Bayley, which is admirably suited to such a purpose—they would be doing signal service to science, as they have already done by the Challenger Expedition and other great

undertakings—and once more put to shame the great continental states of Europe, who spend their money chiefly on breech-loaders and big guns.

I must now briefly speak of some at least of the chief marvels of Peradenia, and I cannot but begin with the famous giant bamboos, the wonder of all who behold them. If on entering the garden we turn to the left towards the river and follow its beautiful bank, we see from afar enormous green thickets of bamboo, more than a hundred feet high and as many wide, bending their mighty crowns, like the huge waving plumes of some giant's helmet, over the river and the path, bestowing shade and coolness on both. As we go nearer we see that each of these bushes consists of several—often of sixty to eighty—tall cylindrical stems, each from a foot to two feet thick. They grow closely crowded together, thrown up from a common root like the creeping stem of a rush, spreading towards the top, and bearing on their frail lateral stems a dense mass of slender green leaves. And these giants are nothing more than grass! Their huge hollow stems are divided by knots like those of all the grasses; but the leaf-sheath, which in our fragile grasses is a filmy scale at the base of the leaf, is in the great bamboo a strong woody curved plate, which without any further ceremony might serve as a breastplate to cover the chest of a well-grown man: a child of three can stand inside one section of the main stem. The bamboo, as every one knows, is one of the most valuable plants of the tropics. A whole book might be written on no other subject than the various uses made of every part of this plant by the natives, as of every part of the various kinds of palm.

Next to the bamboo—or even before it—the palms are, indeed, what attract our attention on every side. Besides the indigenous species, all represented here by magnificent specimens, we find a number of other palms—some natives of the mainland of India, some from the Sunda Isles and Australia, some from Africa and tropical America; as, for instance, *Livistonia*, from China, with its enormous crown of fan-shaped leaves; the celebrated *Lodoicea* of the Seychelles, with its colossal spreading leaves; *Elais*, the oil-palm of Guinea, the feathery leaves of which grow to an enormous length; *Mauritia*, from the Brazils; *Oreodoxa*, the proud king-palm of Havannah, etc. I had already admired and sketched a noble specimen of *Oreodoxa* in Teneriffe in 1866, and was greatly surprised here to find a whole avenue of these trees.

Not less interesting were the splendid clumps of thorny climbing palms, or rattans (*Calamus*), with their graceful waving plumes. Their stems, which, though not thicker than a finger, are extremely tough and elastic, creep to the top of the tallest trees and attain a length of from two hundred to three hundred feet; the longest stems, perhaps, of any plant known.

But, as the proverb says, "Man may not walk under the palms and never rue it!" While I was wandering enchanted through the tall grass by the river under the tall crown of an oil-palm, and carefully tracing the convolutions of a climbing rattan, I suddenly felt a sharp nip in my leg, and on baring it discovered a few small leeches which had attached themselves firmly to the calf, and saw at the same time half a dozen more of the nimble little wretches mounting my boot with surprising rapidity, like so many caterpillars. This was my first acquaintance with the much-to-be-execrated land-leeches of Ceylon, one of the intolerable curses of this beautiful island, of all its plagues the worst, as I was afterwards to learn by much suffering. This species of leech (*Hirudo Ceylanica*) is one of the smallest of its family, but at the same time the most unpleasant. Excepting near the sea and in the highest mountains, they swarm in myriads in every wood and bush; and in some of the forests, particularly near the river banks, and in the marshy jungle of the highlands and the lower hills, it is impossible to take a single step without being attacked by them. Not only do they creep along the ground seeking what they may devour—they are on every bush and tree, from which they frequently drop on to the head or neck of the passer-by, while they always creep up his legs; nay, they can even spring to reach their victim. When they have sucked their fill they are about as large as an ordinary leech; but, when fasting, they are no thicker than a thread and scarcely more than half an inch long. They wriggle through the elastic texture of a stocking with the greatest rapidity. Often the bite is felt at the time, but as often it is not. Once at an evening party I first became aware of a leech by seeing a red streak of blood running down my white trousers.

To be rid of the leech a drop of lemon-juice suffices, and for this purpose, when you walk out in Ceylon, you always put a small lemon in your pocket. I often used instead a drop of the carbolic acid, or spirit I carried about for preserving small animal specimens. The result of the bite is very different with different persons. Those who have a tender skin—and I am unfortunately one of them—feel a painful throbbing in the wound for some days, and a more or less disagreeable inflammation

of the surrounding skin. As the leeches always by preference attack these inflamed and irritated spots with fresh bites, the wound by constant aggravation often becomes so serious as to be even dangerous. When the English seized Kandy in 1815, they had to toil for weeks through the dense jungle of the damp hill country, and they lost a great many men from the incessant attacks of the swarms of leeches. In neighbourhoods which are most infested by them the Europeans wear leech-gaiters, as they are called, as a protection—high overalls of indiarubber, or of some very thick material, which cover the shoes and are secured above the knees. I protected myself in the jungle by painting a ring of carbolic acid round above my high hunting-boots, and this line the leeches never crossed. In some parts of the island, however, the swarms of leeches make any long stay almost impossible, as do the ticks (*Ixodes*) in some other places.

Another terrible nuisance in the garden of Peradenia, as in all parts of the island where there is much water, were the clouds of mosquitoes and stinging flies. There are, of course, mosquito curtains to every bed. But far more dangerous than these annoying insects are the poisonous scorpions and millipedes, of which I have collected some splendid specimens—scorpions six inches, and millipedes a foot long.

One of the loveliest spots in Peradenia is the fernery. Under the dim shade of tall trees on the cool shore of a sparkling stream is a collection of ferns of every kind, large and small, fragile and robust, herbaceous and treelike. It is impossible to dream of anything more lovely and graceful. All the charm of form which distinguishes even our own native ferns with their feathery fronds, is here displayed in infinite variety, from the simplest to the most elaborately compound; and while, on the one hand, some of the minutest species of ferns are hardly to be distinguished from a delicate moss, the tall tree-ferns, bearing a fine tuft of feathery leaves at the top of their slender black stems, reach the stately height of a palm tree.

Besides the ferns, we find the Cycadeae well represented at Peradenia, as well as the elegant Selaginellae, of which there is a fine collection of all the most interesting forms, from the most delicate moss-like species to the robust and bushy growths which almost resemble the extinct arborescent Lycopodiae of the Carboniferous period. Indeed, many of the plant-groups in this garden reminded me of the fossil flora of earlier geological ages, as represented by Meyer in his ingenious

reconstructions of the scenery of the primaeval world. A botanist can here study all the characteristic families of the flora of the tropics through their most interesting and remarkable representatives.

Finally, to mention two features of the scene which especially struck me, there were, first, the climbing plants or lianas, and, secondly, the banyans. Although creeping and climbing plants are to be seen all over the island in the greatest abundance and variety, the garden at Peradenia can show a few splendid separate specimens, such as are rarely to be met with—as, for instance, gigantic stems of *Vitis*, *Cissus*, *Purtada*, *Bignonia*, *Ficus*, etc.; and one or two examples of banyan (*Ficus indica*) with enormous aerial roots, and some allied species of fig (*Ficus galaxifera* etc.), were among the largest and finest trees I saw anywhere in Ceylon.

One of the oldest of these sacred figs, with an enormous roof of branches supported by numerous pillar-props, was a really wonderful sight; it had lost a great portion of its foliage, and its bare boughs looked as if they were covered with large hanging brown fruit. What was my astonishment as I went up to it to see some of these brown fruits detach themselves and fly away! They were large flying-foxes (*Pteropus*), belonging to that curious group of frugivorous bats which are peculiar to the tropics of the old world—Asia and Africa. A few well-aimed shots brought down half a dozen, on which the whole swarm of several hundreds left their hold and flew away screaming loudly. Those I had hit and had not killed outright fought violently with their sharp teeth and curved claws, and it took some trouble to master them with the help of a hunting knife. These "flying-foxes," or "flying-dogs," are very like a fox in shape, size, and colour, particularly about the head; but their limbs, like those of all the bat tribe, are connected by an elastic web, by means of which they fly about very quickly and accurately. Their flight, however, is not at all like that of our bats, and has more resemblance to that of a crow. The flying foxes live on fruit and do great mischief. They have a particular preference for the sweet palm-wine, and they are often found in the morning—not infrequently drunk— in the vessels which the Cinghalese place at night in the palm-crowns to catch the flowing sap. This predilection may no doubt be amply accounted for by the near affinity of the bats to apes—as proved by their phylogenetic pedigree—and through apes to men.

In the foxy-red fur of the flying-foxes I found a large parasitic insect (*Nycteribia*), of a strange spider-like form, belonging to the group

of Pupipara.* These, like the flea, are really Diptera, or two-winged insects, which, in consequence of their parasitical mode of life, have lost the use of their wings, which have then become abortive. The larvae are developed inside the mother to such a stage that immediately on being released they enter the pupa state and are very soon fully developed. The large Nycteribia of the flying-fox ran with great swiftness over the body of its host and over my hand when I endeavoured to catch the specimens; then it hastily crept under my clothes, or attached itself to my skin with its hook-like legs.

I was destined to make another interesting and somewhat dangerous discovery this same day. In the afternoon, when heavy rain had set in, just as I was putting an enormous black centipede into spirits, a large spectacled snake, the much dreaded cobra di capello, *Naja tripudians*, glided into my bedroom through the open door from the garden. I had not observed it, though it had come to within about a foot of me, and was first made aware of its presence by my man's loud cries of "Cobra, cobra!" With his assistance I had soon mastered the beautiful reptile, which was about three feet and a half long, and it found its last home in a keg of spirits, to which a very curious snake-like amphibian, the *Caecilia* or blind snake, had already been consigned.

* Born in the pupa state.

CHAPTER VII

KANDY

AMONG the few towns of which Ceylon can boast, Kandy, though so small as scarcely to deserve the name of a town, is the most famous, partly as being the present chief town of the mountainous central district, partly as having formerly been the capital of the native kings, and, chiefly, because a certain temple in Kandy contains the "sacred tooth" of Buddha, one of the relics held most precious by his worshippers. Besides all this, I had read in Sir Emerson Tennent's delightful book on Ceylon a rapturous description of the incomparable beauty of the situation and environs of Kandy, and later travellers, copying Tennent for the most part, had echoed this enthusiastic praise. I was therefore not a little excited at the idea of seeing Kandy when I visited it from Peradenia —only three miles away—on the brilliant morning of the 6th December.

I have often found by experience that very famous spots which have for some time been the fashion and whose praises have been sung by one traveller after another are in reality hardly worth a visit, while not infrequently some delightful but unknown place lies close at hand, which every one passes by unheeded, simply because it is not mentioned in the guide-books. This was precisely what happened to me with regard to Kandy, and I will confess at once that my visit to that far-famed town was from first to last a complete disappointment.

Kandy the "proud capital" might be more fitly designated as a "humble village," where the narrow streets are composed of many more Cinghalese huts than European bungalows. They are not even separated

into a "fort" and "native town" like Colombo, Galle, Matura, and the other towns in the island. The two long parallel main streets run in a perfectly straight line from end to end, and so do the few side streets, which cross them at right angles; the "beautiful lake," which lies outside the town and is spoken of as its peculiar ornament, is a small rectangular artificial tank, and its straight margins are planted with stiff avenues of trees, likewise straight. Hence, when the visitor looks across the little basin, in which the town and tank lie, having climbed one of the low hills that surround it by one of the numerous formal promenades, the view is pleasing and regular, but anything rather than picturesque. The scene is farther disfigured by a huge prison, newly erected, with high, bare outside walls, much too large and ponderous for the relatively small scale of the immediate surroundings. Even the green hills, partly cultivated and partly wooded, which shut in the valley, with a background of higher elevation on one side, have no special beauty, either of form or of picturesque grouping. Thus it turned out, that the sketch-book, which I had carried with hopeful intent to Kandy, came back empty, and that, with the best intentions in the world, I could not hit upon a single spot worthy to be recorded by the brush.

The prettiest thing in Kandy, to my taste, is the lovely garden in which the English governor's modern residence stands. It is charmingly laid out on the slope of a hill, and contains some noble trees, and a number of fine ornamental plants; still, of course, it is not to be compared with Peradenia. The governor's house, in which, by his polite invitation, I spent a most agreeable evening, contains but few reception-rooms; but they are large, airy, and elegantly furnished, and surrounded by pretty arcades and verandahs. However, the presence of scorpions, snakes, and such tropical "small deer," not to mention numbers of leeches, must detract from the pleasures of a residence there.

The palace of the native kings, which stands near the artificial lake, at a short distance outside the town, is a gloomy building, all on the ground floor, and its dark and mouldy chambers offer nothing worthy of remark, excepting the huge masses of fungi and other cryptogamic growths, which clothe the thick damp stone walls, both without and within. A Royal Audience Hall, an open structure supported on pillars, near to the palace, is now used for the public business of the district police.

The famous Buddha temple of Kandy again, which stands within the same enclosing wall and surrounding moat as the palace, did not

fulfil the expectations raised by its widely spread reputation. It is of small extent, badly preserved, and devoid of any particular artistic merit. The primitive wall paintings, and the carved ornaments in wood and ivory, are the same as are to be seen in all other Buddhist temples. As Kandy did not become the capital of the native kings till the sixteenth century, and the palace and the temple alike were built no longer ago than 1600, they have not even the charm of a high antiquity. Nor does the Buddha-tooth possess any special interest; it is kept concealed in the temple under a silver bell, in an octagonal tower with a pointed roof. Although this tooth has been an object of devout veneration and worship to many millions of superstitious souls for more than two thousand years and down to the present day, and although it has—as Emerson Tennent expressly tells us—played an important part in the history of Ceylon, it is in fact nothing else than a simple rough-hewn finger-shaped bit of ivory, about two inches long and one inch thick. There are, however, many duplicates of the true tooth of Buddha; but this, of course, in no way detracts from the sacredness of this relic.

From Kandy I made an excursion with my two botanical friends, Dr. Trimen and Dr. Ward, to Fairyland, a few miles farther, to visit Dr. Trimen's predecessor, Dr. Thwaites. He was director of the Botanic Garden of Peradenia for thirty years, and retired a few years before his death to enjoy his well-earned leisure in the peaceful solitude of the hill country. His little bungalow lies quite hidden in an elevated ravine about eight miles south of Kandy, in the midst of coffee plantations. This was the first coffee country I had seen, but as I subsequently travelled for days through coffee plantations in the hills I will not now pause to describe one.

Dr. Thwaites was the meritorious author of the first Flora of Ceylon which was published under the title of "Enumeratio Plantarum Zeylaniae" (London: 1864). In it he described about three thousand vascular plants—about the thirtieth part of all the species of plants which at that time were known on the face of the globe. Since then, however, many new species have been discovered on the island itself, which, according to Dr. Gardner's estimate, possesses about five thousand species; at any rate, considerably more than all Germany can boast.

My copy of this Flora Zeylanica, which I had taken with me, had formerly belonged to a German botanist of Potsdam—Nietner. He had been in the island when young, as a gardener, and by his industry and

thrifty diligence he acquired a considerable coffee-plantation. For a quarter of a century he was an indefatigable student of the natural history of Ceylon, and particularly distinguished as a discoverer of new insects. He unfortunately died shortly before his intended return to Germany. His widow, who is still living at Potsdam, and from whom I obtained much useful information before starting, presented me in the kindest way with several books that had belonged to her husband, among others with this Flora of Thwaites' which the author had given him. It was no small pleasure to the worthy old man when I showed him this copy with the inscription in his own handwriting. It was no doubt the first copy that had ever travelled from Ceylon to Germany, and back again to the island in a naturalist's possession.

CHAPTER VIII

THE ROAD FROM COLOMBO TO GALLE

The two first weeks of my stay in Ceylon had flown like a dream of constant wonder and delight. In Colombo I had made acquaintance with the most remarkable characteristics of Cinghalese nature and humanity, and at Peradenia I had admired the amazing fecundity and variety of tropical vegetation. Now it was high time that I should turn my attention to the scientific object of my journey—the study, namely, of the multiform and, to a great extent, unknown creatures of the Indian seas. I was more particularly anxious to examine those classes of marine creatures to which I had for many years been devoting my chief attention—Monera and Radiolaria, Sponges and Corals, Medusae and Siphonophora, as they exist on the shores of Ceylon. I might hope to find some quite new modifications of structure as developed under the influence of the tropical sun and the general conditions of life.

The conditions under which these classes of marine creatures attain their full development are highly complicated, and it is by no means a matter of indifference where on the sea-coast we attempt to study them. Not only are they affected by the universal conditions of sea-water—its saltness, purity, temperature, strength of current, and depth, but the nature of the coast—as being rocky or sandy, chalk or schist, barren or rich in vegetation—has an important influence on the development of the marine fauna. Especially marked are the effects of a greater or less admixture of fresh water, and the greater or smaller force of the waves and surf, as being favourable to the existence of certain groups of animals,

while to others they are injurious or fatal. For any extensive multiplication of those classes of floating sea-creatures which I am specially interested in investigating—Radiolaria, Medusae, and Siphonophora—the most favourable situations are marine bays with deep, clear still water, protected by rocky promontories, free from any great influx of fresh water and stirred by currents which carry in shoals of floating creatures. It is to such a combination of conditions that the harbour of Messina, the bay of Naples, and the gulf of Villafranca in the Mediterranean have long owed their repute and popularity among zoologists.

A glance at a map of India at once betrays the fact that very few such sheltered bays exist round its shores; they are neither so many nor so extensive as on the indented and varied coast of our incomparable Mediterranean. On the shores of Ceylon, however, there are three such sheltered gulfs—the two fine harbours of Galle and of Belligam on the south-west coast, and the large island-studded gulf of Trincomalie on the north-east. Trincomalie was, indeed, pronounced by Nelson to be one of the best harbours in the world. The English Government, a sovereign power in every quarter of the globe, as keen to perceive as it is prompt to improve and utilize every natural advantage, did not fail, on taking possession of Ceylon, to fortify Trincomalie and make it the naval port of the island. The Dutch had previously built two small forts on two headlands to protect the harbour—Fort Frederick to the north-east and Fort Ostenburg to the south. These were strengthened and extended by the English, who also greatly improved the little town. But much yet remains to be done, particularly when it is remembered that Trincomalie is the largest and most important harbour of refuge in all British India. In the struggle which sooner or later England must go through to keep her hold upon India, the stronghold and port of Trincomalie must undoubtedly prove of the utmost importance.

The harbour of Trincomalie is remarkable not only for its extent and depth, but for its numerous inlets and bays and the little wooded islands which guard its entrance; and, merely from its aspect, we are prepared to find it richly populated with marine life. In point of fact, several groups of animals, and more particularly Mollusca and Echinodermata, which creep upon the rocky bottom, appear to exist in a greater variety of species here than on any other part of the coast of Ceylon. It has long been famous for its handsome shells, richly coloured univalves, and elegantly formed bivalves; and several naturalists who have visited Trincomalie have discovered new and interesting forms of marine

life. It was, therefore, very natural that I should direct my observations to this spot above all others, and decide on dredging and fishing in its waters for a month at least. Unfortunately, however, insuperable difficulties arose when I proposed carrying out this project.

The communication between Trincomalie and the capital is even now very defective, and leaves much to be desired, whether by water or by land. A railway is projected between Kandy and Trincomalie, but is not yet begun. As Kandy is, as nearly as may be, half-way between the eastern and western coasts, and has long been connected with the western side by the Colombo railway, the extension of the line to the east coast seems indispensable, particularly when we consider the great strategical importance of Trincomalie and the superiority of its harbour, which is but little used by the mercantile marine. In spite of all this Trincomalie can still only be reached from Kandy by a very difficult and fatiguing road, passing day after day through dense and uninhabited forests. At the beginning of December, too, when I wanted to make the journey, this road was in a particularly bad state. The heavy rain-fall accompanying the south-west monsoon had swept away many of the bridges, and made large tracts impassable; I could not but fear that the bullock-carts, which would have to carry my sixteen cases of instruments, etc., would stick on the way, or only arrive after much delay and with much damage.

Nor was the sea-voyage more promising. The Government despatches a small steamship, the *Serendib*, every month to make the circuit of the island, taking the northern half and the southern half first, alternately. This little coasting vessel is the only means of regular and direct communication between the principal places on the coast, otherwise there is no intercourse, but by very uncertain and infrequent sailing boats. As ill-luck would have it, at the very time when I wanted to go to Trincomalie by the *Serendib*, it had suffered serious damage in a storm, and had gone to Bombay for repairs. Thus, in the first place, I had to postpone my visit to Trincomalie till a later date, and then, to my great regret, in consequence of other hinderances, the plan could not be carried out at all.

For the moment, then, I had no choice but to set out for the south coast, and set up my zoological laboratory either at Galle, or at Belligam. Galle, or Point de Galle, the most important seaport in the island, having been till within a few years the stopping station for all Indian travellers,

and the place where European voyagers landed and embarked, offered the advantages of European civilization in procuring the necessaries of life and intercourse with cultivated English society. I might count on being able to fish in the fine large harbour in European boats, on finding an abundance of interesting marine creatures on its celebrated coral reefs, and on studying and preserving them with comparative ease and convenience. There would also be the advantage that other naturalists had worked there before me, and I should have the benefit of their experience of the locality and of its animal life. Ransonnet's fine work especially contains much valuable information as to the coral reefs of Galle.

The prospects offered by Belligam were widely different. Its beautiful and sheltered bay—fifteen miles further south than Galle, and halfway between this and Matura, the southernmost point of the island—might be expected to resemble Galle as regards its coral banks and other topographical and zoological conditions; it had also, as being rarely visited and little studied, all the additional charm of the new and unknown. The tropical vegetation and the scenery generally were, from all I had read and heard, richer and more beautiful even than at Galle. To me, the greatest temptation of all was that after some months of the restraint of our artificial social life I should there escape it entirely; I could look forward to giving myself up in perfect liberty to the delights of the lavish nature of the tropics, to living in the midst of the simple children of nature, and forming some conception of that visionary primaeval paradise into which the human race was born. For Belligam is nothing more than a large, purely Cinghalese village, inhabited by fishermen, herdsmen, and tillers of the soil. But few of these four thousand swarthy natives, among whom there are no Europeans, inhabit the village itself on the shore of the bay; most of them live in scattered huts, dotted here and there on a broad level, covered with a magnificent wood of cocoa-nut trees. I should be able to pursue my investigations more steadily and with less interruption in the quiet and secluded rest-house of Belligam, than in the busy town of Galle among a crowd of kind friends and inquisitive acquaintances. Of course, I was prepared to meet with greater difficulties in arranging my laboratory and in carrying on my work; in fact, it was not impossible that unforeseen and insuperable obstacles might more easily occur there than in Galle to put a stop to it.

After much hesitation, and long debating the *pros* and *cons*, I finally decided for Belligam, and I had no reason to regret the choice. The six weeks I spent there were full to overflowing of wonderful experiences, and never to be forgotten as forming the crowning "bouquet" of my Indian journey, the sweetest and brightest flowers in a garland of delightful memories. Though I might perhaps have carried on my zoological studies better and more conveniently in Galle, I gained infinitely more on the side of general knowledge of nature and humanity in the charming seclusion of Belligam.

I had, of course, to make considerable preparations for so long a stay in a remote fishing village. As the only possible residence for a European was the Government resthouse, and as no one is ever allowed to stay in these hostelries for more than three days, I had, in the first place, to obtain leave to reside there for several weeks. Sir James Longden, the governor of the island, to whom I had been particularly recommended by the English Government—and to whom I here beg to record my gratitude for his kind reception—gave me a letter of introduction to the president of the southern district, which not only secured me this permission, but enjoined each and every government official to be in all respects civil and serviceable to me. Under the pattern regularity and discipline which prevails in all the machinery of government throughout the English colonies, as well as in the mother country, such a letter of recommendation is not only an invaluable, but in many cases an indispensable talisman. This is especially the case in Ceylon, since the government of the island is independent of that of India, and under the direct authority of the Colonial Office in London; the governor is pretty nearly an unlimited monarch, and troubles himself but little with the decisions of his parliament of councillors. Most of the defects in the administration of affairs under which this fine island suffers are attributed to this absolute power of an individual, and it is certainly not at all to the taste of the constitutional English. One of the worst faults in the system, however, is that the governor never remains in office for more than four years—much too short a period; hardly enough, indeed, to enable him to know the island thoroughly. Still, under the peculiar conditions of a population consisting of two and a half millions, of which only three thousand are Europeans, the concentration of power in one person has many advantages. On the whole, a closer intimacy with the state of affairs in Ceylon confirmed me in the feeling that here, as in their other colonies, the practical instinct of the English hits on the right

method, and manages the administration with greater discretion and insight than would be possible to most other civilized nations.

After providing myself with some letters of introduction to Galle and making numerous purchases for fitting up my lodgings at Belligam, I stowed my sixteen boxes in a large two-wheeled bullock-cart, which was to transport them to Galle within a week. These bullock-carts are the universal conveyance wherever there are roads on which they can travel; the largest can carry as much as two tons on their two huge wheels, and are pulled by four strong humped oxen, or zebus, of the largest breed. The yoke is not fixed across the front of the head but across the neck, just in front of the hump which bears the weight. The cart is covered with an arched tilt of plaited leaves of the cocoa-nut, and this thick double matting protects the freight within against the heaviest rain. Mats of the same material are hung in front and behind to close the awning. The cargo must be so skilfully packed and balanced that the centre of gravity rests in the middle over the axle of the single pair of wheels.

The driver sits on the shaft close behind the beasts, or sometimes between them; he never ceases urging them by shouts, or by rubbing their tails between their legs. Hundreds of these bullock-carts, some drawn by two and some by four zebus, are the living accessories of every road scene in Ceylon. Among these, at a quicker pace and sometimes even at a brisk trot, run the lighter bullock-carts—"bullock-bandys," or "hackeries." These are smaller vehicles of the same shape, and drawn by a pretty and fairly swift bullock of a smaller breed.

On the 9th of December I left the hospitable roof of "Whist Bungalow," followed by the good wishes and not less good advice of my kind friends. The journey from Colombo to Galle is a favourite theme for a chapter in every account of a stay in Ceylon. Until a few years since all the mail steamers went first to Galle direct, and as the first excursion made by the passengers was always to Kandy, they first made acquaintance with the beauties of the island on that road. They are no doubt lavishly displayed there. The park-like cocoa-nut groves, which I first saw on my expedition to Kaduvella, with their endless variety of lovely pictures, here extend over a wide tract along the south-west coast. The road winds among them, coming out to skirt the rocky or sandy sea-shore or plunging into their thickest depths, and crossing bridges over the numerous small rivers which here flow into the sea.

Formerly, the whole distance from Colombo to Galle had to be travelled in a cart or carriage, but now the railway goes for about a third of the way. The line runs near the coast, cutting through the palm forest in an almost straight line, and running as far as Caltura. The extension of the line to Galle, which would be immensely advantageous to this port, is not allowed by the Government, from a fear lest Galle should thereby gain a pre-eminence above Colombo. As the traffic between the two towns is very considerable and constantly increasing, there can be no doubts as to its paying the shareholders. Unfortunately the ruling determination to keep Colombo ahead of Galle at any cost impels the Government to refuse even to grant their charter to a perfectly sound company, who are prepared with capital to construct and work the line. This is a standing grievance and discussed on every opportunity. The traveller is consequently compelled either to hire a conveyance at a great expense, or to trust himself in the mail omnibus which runs daily between Galle and Caltura; but this, too, is dear and remarkably uncomfortable.

This omnibus boasts, it is true, of the high-sounding title of "Royal Mail Coach," and displays the arms of England on its door panel, with the motto, "Honi soit qui mal y pense;" but the hint is unqualified mockery in view of the coach itself and the horses whose suffering lot it is to draw it. The slightly built vehicle looks as if it had been "constructed to carry" barely half a dozen passengers, but when opportunity serves double the number are crammed into it. The two narrow seats in the small "inside," and another stuck up behind, are then made to hold each three persons, though there is hardly space for two. The best seats are the box-seats by the driver, under the shade of a projecting roof. Here the traveller has a free view of the glorious scenery on every side, and at the same time escapes the strong and by no means agreeable perfume that exhales from the perspiring Cinghalese, well polished with cocoa-nut oil, who are packed into the inside places. For this immunity, however, the white traveller pays fifteen rupees for a five hours' ride—about six shillings an hour—while the dusky native pays only half.

The most horrible concomitant of this omnibus journey, as of all coach travelling in Ceylon, are the torments inflicted on the miserable horses. The "mild Cinghalese" seem, from time immemorial to the present day, never to have conceived the idea that the management of horses is an art to be acquired, or that the horse itself must be trained or broken to harness. On the contrary, they seem to take it for granted

that this comes as a matter of course, and that horses have an inherited tendency to pull vehicles. So, without any proper training, an unbroken colt is fastened in front of some conveyance by a kind of tackle, which is as uncomfortable to the beast as it is ill-adapted to its purpose, and then put to every variety of torture till it takes to its heels in sheer desperation. As a rule neither shouts nor flogging reduce it to this extremity, and every kind of ill-treatment is resorted to: it is dragged by the nostrils, which are particularly sensitive in the horse; its ears are wrung almost out of its head; ropes are tied to its forelegs, and half a dozen of howling and shrieking youngsters drag the poor beast forward, while others hold on to his tail and belabour him behind, sometimes even scorching the hapless brute with torches. In short, he goes through every torment that the "Holy Office" ever devised for the conversion of heretics and infidels; and many a time, as I have sat perched on the box-seat for a quarter of an hour at a time, forced to look on at these and similar barbarities without being able to prevent them, the question has irresistibly risen in my mind: For whose sins had these wretched horses to suffer? Who knows whether a similar fancy may not be lurking in the minds of the black coachman and stable lads, who are most of them worshippers of Siva, and believe in the transmigration of the soul. Perhaps they imagine that by these brutalities they are avenging their wrongs on the degraded souls of those cruel princes and warriors who were the former tyrants of their race.

It must be either some such notion as this or a total absence of humane feeling—or, perhaps, the extraordinary theory which is occasionally found to exist, even in Europe, that the lower animals are devoid of sensation—which explains the fact that the Cinghalese consider these and similar tortures inflicted on beasts as a delightful entertainment. The wretched oxen are always marked with their owners' names in large letters, cut quite through the skin. In the villages, through which the road passes and where the horses are changed, the arrival of the coach is the great event of the day, and all the inhabitants assemble with eager curiosity, partly to stare at the travellers and criticize their appearance, partly to look on at the ceremony of changing horses, and chiefly to play an active part in tormenting the fresh team. The poor beasts are at last driven to fly, and they usually start at a wild gallop, pursued by the yells of the populace, and rush madly onward till they lose their breath and fall into a slow trot. Covered with sweat, foaming

at the mouth, and trembling in every limb, in about half an hour they reach the posting station, where they are parted from their fellow-sufferers.

This mode of travelling, it need not be said, is not agreeable to the stranger who has trusted his person to the ricketty stage coach, nor is it devoid of danger. The conveyance is often upset and damaged, the goaded horses not unfrequently run away across country, or back the coach into the banana thickets or a deep ditch, and I was always prepared to spring from my perch on the box at a critical moment. In fact, it is difficult to conceive how the English Government, which is generally so strict in its arrangements and discipline, has not long since put an end to this brutality to animals, and more particularly extended its protection to the wretched horses that serve the "Royal Mail Coach."

Great Buddha! you who strove so earnestly to diminish the miseries of this miserable life and mitigate the torments of suffering creation, what mistakes you made! What a blessing you would have conferred on men and beasts if, instead of the foolish prohibition to take the life of any creature, you had laid down the merciful law: Thou shalt torture no living thing. The prohibition is, on the whole, scrupulously attended to by every Cinghalese Buddhist, though there are many exceptions. For instance, they look on with frank satisfaction when a naturalist fires at the monkeys and flying foxes that rob them of their bananas, or when a planter shoots the elephants that tread down their rice-fields, the leopards that carry off their goats, or the palm-cats which devour their fowls. But, as a rule, they will give no assistance or encouragement, and take the greatest care to avoid killing anything themselves. For this reason, almost all who belong to the fishermen's caste are Roman Catholics; they have renounced Buddhism to avoid all difficulties in the way of catching fish.

The stubborn recalcitrancy displayed by the Indian horses to their tormentors, and their universal propensity to shy at unexpected moments, together with the frenzied pace at which they start, demand no small skill in the driver. The coachman and his assistant, the stable lad, must be constantly on the alert. The endurance and staying power of these horse-boys are quite amazing; naked, all but a loin-cloth and a post-horn strung round him, with a white turban on his head, a black Tamil will run a whole stage by the side of the horses, pulling the traces first one way and then another, and swinging himself up on to the step or

coach pole when going at the utmost pace. If the coach meets another vehicle, or if the road makes a sudden bend, he seizes the horses' heads and gives them a violent jerk in the right direction. In crossing the long wooden bridges which span the wide torrents, he suddenly checks the steeds in their career and leads them carefully over the shifting and clattering logs. If a child runs into the road, as often happens, or an old woman does not get out of the way, the horse-boy jumps forward with swift promptitude and pushes the horses back with a strong hand. In short, he must be ready for everything, here, there, and everywhere.

Although the seventy miles of road between Colombo and Galle present no variety in the character of the landscape, the enchanted eye of the traveller is never weary of it. The unflagging charm of the cocoa-nut wood, and the inexhaustible variety of grouping and combination in the accessories of the landscape, never fail to keep him interested. The stinging heat of the tropical sun is not often unbearable, for it is greatly mitigated, both by the cool sea breeze and the shade of the woods. The elegant plumes of the cocoa-nut palm, as of most palm-trees, do not, it is true, afford the deep and refreshing shade of the denser foliage of our forest trees, for the sunbeams filter through the divisions between the leaflets in every direction in broken flecks of light. But their slender stems are, in many cases, covered by graceful garlands of climbing pepper-vines and other creepers; they hang in festoons from one tree to another, like artificially woven wreaths, and hang down in massive pendants, densely covered with leaves. Many of them are gay with splendid flowers, as, for instance, the flame-coloured *Gloriosa*, the blue *Thunbergia*, the rose-pink *Bourgainvillea*, and gold-coloured butterfly-orchids of various species.

Between and under the ubiquitous palms grow a host of other trees, particularly the stately mango, and the towering breadfruit tree, with its dense dark-green crown. The slender columnar trunk of the papaw (*Carica papaya*) is elegantly marked and crowned with a regular diadem of large palmate leaves. Many varieties of jasmine, orange, and lemon trees are completely covered with fragrant white blossoms; and among these nestle the pretty little white or brown huts of the natives, with their idyllic surroundings—the traveller might fancy himself riding through one long village in the midst of palm gardens, but that now and again he passes through a more crowded tract of forest trees, or finds himself among a colony of houses, standing in closer rows round a country bazaar, and forming a real and more populous village.

Presently the road diverges towards the sea and runs for some distance along the shore. Here wide levels of smooth sand alternate with rocky hills, and these are picturesquely covered with the *Pandanus*, or screw-pine. The pandang (*Pandanus odoratissimus*) is one of the most remarkable and characteristic plants of the tropics. It is nearly related to the palm tribe, and is known by the name of screw-pine, which should more properly be screw-palm. The elegant trunk is cylindrical, commonly from twenty to forty feet high, and often bent; it is forked or branched, like a candelabrum. Each branch bears at the end a thick sheaf of large sword-shaped leaves, like those of a *Dracaena* or *Yucca*. These leaves are sometimes sea-green and sometimes dark, gracefully drooping, and with their bases arranged in a close spiral, so that the tuft looks as if it had been regularly screwed. From the bottom of this spiral hang racemes of white and wonderfully fragrant flowers, or large fruits, something like a pine-apple. The most singular part of this tree is its slender aerial roots, which are thrown out from the trunk at various places and fork below; when they reach the soil they take root in it, and serve as props to the feeble stem, looking exactly as if the tree were mounted on stilts. These screw-pines have a particularly grotesque appearance when they stand upon these stilts, high above the surrounding brushwood, or straddle down into the rifts between the stones, or creep like snakes along the surface of the soil.

The white stretch of sand which forms the strand, frequently broken by dark jutting rock, is alive with nimble crabs, which vanish with great rapidity; indeed, their swiftness has gained them the classic-sounding name of *Ocypoda*. Numbers of hermit crabs (*Pagurus*) wander meditatively among their light-footed relatives, dragging the shells in which they protect their soft and sensitive bodies with great dignity. Here and there sandpipers are to be seen, graceful herons, plovers, and other shore-birds, busied in catching fish in successful competition with the Cinghalese. These fishermen ply their calling sometimes singly, sometimes in parties; they then commonly go out in several canoes with large seine nets, which they combine to draw to the shore. The solitary fishers, on the contrary, prefer to take their prey in the rolling surf; and it is very interesting to watch the naked brown figure, with no protection against the scorching sun but a broad-brimmed palm hat, leaping boldly into the tumbling waves and bringing out the fish in a small hand-net. He seems to enjoy his fresh salt bath as much as his children do, who play by

dozens on the sands, and are accomplished swimmers by the time they are six or eight years old.

The white or yellowish margin of sand follows the coast often for miles, like a narrow gleaming satin ribbon, bending with its multifarious curves and beautiful open bays, and dividing the deep blue waters of the Indian Ocean from the bright green cocoa-nut groves. This hem of sand is all the prettier where the stooping heads of the crowded palms bend far across it, as if leaning forward to breathe the fresh sea-breeze more freely and enjoy the full blaze of the sun-light. The soil at their feet is strewn with beautiful shore plants, of which three are particularly conspicuous—the goat's foot convolvulus, with its two-lobed leaves and violet flowers—*Ipomaea pes-capri*; an elegant pink-blossomed *Impatiens*; and the noble funnel-shaped lily *Pancratium Zeylanicum*. Its beautiful white flowers, which have narrow pendant petals, grow in umbels on slender stems six to eight feet high. Then by the roadside there are the huge arrow-head leaves of the *Calla*, a handsome aroid. If the sun is too hot, or a shower comes on suddenly, the Cinghalese simply breaks off one of the great Caladium leaves—it protects him better than a cotton or silk umbrella, and is elegantly marked with transparent veining, often painted with crimson spots. Thus, in this sunny paradise, parasols grow by the wayside, or, more precisely, *en-tout-cas*, since they serve the double purpose of an umbrella and a sun-shade.

A most beautiful feature of the Galle and Colombo road are the numerous river mouths, which intersect the cocos-wood, and the wide lagoons which stretch between them, particularly along the northern portion from Colombo to Caltura. The former lords of the island, the Dutch, were so delighted with these water-ways, which reminded them of their native land, that they adapted them to a regular system of canals and neglected the land roads. Under their rule numerous barges and canal-boats, like the *Trekschuit* of the low countries, travelled from town to town, and were the chief means of communication. Since the English have made the capital high road, the water-traffic has fallen into desuetude. But they still afford a succession of pleasing pictures to the traveller as he is hurried by, with their banks covered with dense thickets of bamboo and lofty palms, and their pretty little islands and rocks; the tall cocoa-nut palms tower above the undergrowth, "like a forest above the forest," as Humboldt aptly describes it. The undulating hills in the blue distance supply an appropriate background where, here and there, the

high heads of the mountains are visible, and loftiest of all the noble cone of Adam's Peak.

At the mouths of the larger rivers, several of which are crossed on the road, the smiling landscape assumes a graver character; the sombre mangroves are a particularly conspicuous feature. The shore of these estuaries is generally thickly covered with them, and their aerial roots form an impenetrable tangle. Formerly they used to be infested with crocodiles, but the progress of civilization and agriculture has driven these reptiles up the rivers. The finest of the rivers is the noble Kalu Ganga, or Black river, which I afterwards explored for the greater part of its length. The lower reaches are as wide as the Rhine at Cologne. At the mouth stands Caltura, a large village, and the terminus of the railway. At the southernmost end of Caltura a magnificent banyan tree grows across the high road, like a triumphal arch. The aerial roots of this huge tree have taken hold on the soil on the opposite side of the road and grown to be large trunks, and these and the main trunk form a lofty Gothic vault, which is all the more striking because a number of parasitic ferns, orchids, wild vines, and other parasitic plants have overgrown the stems. Not far from the shore near Caltura I found, on a subsequent visit, another wonderful tree—an indiarubber tree—of which the snake-like roots, twisted and plaited till they look like a close lattice, form a perfect labyrinth. Troops of merry children were playing in the nooks between these root-trellices.

Another delightful spot is the rest-house of Bentotte, where the "Royal Mail" stops for an hour to allow the passengers to rest, and recruit their powers of endurance by breakfast. A particular delicacy here are the oysters, for which the place is famous. They are served raw, or baked, or pickled in vinegar. The rest-house is beautifully situated on a hill, among tall tamarind trees, and has a splendid view over the sunlit sea and the bridge which spans the river-mouth. After breakfast I watched the oyster-fishery below this bridge, and then spent a quarter of an hour in lounging through the picturesque bazaar of the straggling town. The wares and traffic in this bazaar are in perfect keeping with the idyllic character of the surroundings, with the primitive furniture of the native huts, and the elementary character of their owners' dress. By far the most important articles of commerce are rice and curry, the staples of food, and betel and areca, the favourite luxury. These and other matters for sale lie temptingly spread on wide green banana leaves in simple booths, with an open front, serving at once as door and window.

Between them are heaps of cocoa-nuts, monstrous bunches of bananas, and piles of scented pine-apples; the starchy roots of the yam, the *Colocasia*, and other plants; enormous breadfruit, weighing from thirty to forty pounds each, and the nearly allied jack-fruit; and then, as delicacies, the noble mango and the dainty anona, or custard-apple. While we are strongly attracted to these fruit-stalls—which the Cinghalese often decorate very prettily with flowers and boughs—by their delicious perfume, we are equally repelled from certain others by a pungent odour, which is anything rather than tempting. This "ancient and fish-like smell" proceeds from heaps of fresh and dried marine creatures, principally fish and crustacea; among these the prime favourites are shrimps or prawns, an important ingredient in the preparation of the native spiced dish, curry.*

There can be no greater mistake than to expect to find in these Cinghalese markets the noise and clamour and confusion which are characteristic of market scenes among most nations, and more particularly in the southern countries of Europe. Any one who has looked on, for instance, at the bustle and hurry on the pretty piazza at Verona, or the vehement tumult of Santa Lucia at Naples, might imagine that in a tropical bazaar in Ceylon the crowd and uproar would rise to a still higher pitch. Nothing of the kind. The gentle subdued nature of the Cinghalese affects even their way of trading; buyers and sellers alike seem to take but a feeble interest in the transaction, small in proportion to the trifling copper coin for which the most splendid fruits may be purchased. These coins, I may mention, are pieces of one cent and of five cents, and there are a hundred cents to a rupee (worth two shillings); they are stamped with a cocoa palm. The Cinghalese, however, are not indifferent to the value of money, but they need less of the commodity, perhaps, than any other people on earth; for there are few spots, indeed, where kindly mother Nature pours out so inexhaustible and uninterrupted a supply of her richest and choicest gifts as on this privileged isle. The poorest Cinghalese can with the greatest ease earn as much as will buy the rice which is absolutely indispensable to life; ten to fifteen cents are ample for a day's food. The abundance of vegetable produce on land, and the quantity of fish obtained from the sea are so enormous that there is no lack of curry with the rice and other variety in their diet.

* *Reis wuze*, Herr Haeckel calls curry, regarding it—as it no doubt was originally—as a spice to flavour the inevitable meal of rice.

Why, then, should the Cinghalese make life bitter by labour? Nay, nay—they have far too much of the easy-going nature, the true philosophy of life. So they may be seen stretched at full length and reposing in their simple dwellings, or squatting in groups and chatting to their heart's content. The small amount of labour required in their garden-plots is soon accomplished, and the rest of the time is theirs to play in. But their very play is anything rather than exciting or energetic. On the contrary, a spell of peace and languor seems to have been cast over all the life and doings of these happy children of nature, which is amazingly fascinating and strange. Enviable Cinghalese! you have no care either for the morrow or for the more distant future. All that you and your children need to keep you alive grows under your hand, and what more you may desire by way of luxury you can procure with the very smallest amount of exertion. You are, indeed, like "the lilies of the field" which grow round your humble homes. "They toil not, neither do they spin," and their mother, Nature, feeds them. You, like them, have no war-like ambitions; no anxious reflections on the increasing competition in trade, or the rise and fall of stock ever disturb your slumbers. Titles and Orders, the highest aim of civilized men, are to you unknown. And in spite of that you enjoy life! Nay, I almost think it has never occurred to you to envy us Europeans our thousand superfluous requirements. You are quite content to be simple human souls, children of nature, living in paradise, and enjoying it. There you lie, at full length, under the palm roof of your huts, contemplating the dancing lights and shadows among the plumes of the cocoa-nuts; perennially refreshed by the unequalled luxury of chewing betel-nut, and playing at intervals with your sweet little children, or taking a delicious bath in the river that flows by the road, and devoting your whole attention to the subsequent toilet, so as to set the tortoiseshell comb at the most bewitching angle in that elaborately twisted top-knot. Where is the careworn son of culture who would not envy you your harmless mode of existence and your Eden-like simplicity!

These and similar reflections irresistibly rose in my mind as I stood gazing at the groups of Cinghalese enjoying life in their blameless fashion in the peaceful silence of their banana groves, while the coach changed horses at the last stage before reaching Galle. Here the struggle for existence seemed to have ceased; *seemed*, at any rate. I was first roused from my reveries by being asked by the two horse-boys to mount again to my box-seat. These worthy Malabars then informed me, in broken

English, that this was an appropriate moment for presenting them with the usual "tip," or "bakshseesh," for drink, since, when we should arrive in Galle, they would be too busy and the time would be too short for this important matter to meet with due attention. As I had seen a highly respectable Cinghalese, who had been set down some time previously, give each of these two fellows a double anna, a little silver coin worth about threepence, I thought I was doing ample credit to my higher dignity as a white man by offering four times as much—half a rupee a-piece. But the coachman and the conductor alike held up my donation with indignant gestures, and gave me a lecture on the superiority of my white skin, which was, no doubt, highly flattering. The upshot of it was that every white gentleman must give at least double—a rupee—to each of them as drink-money, and that a man as white as I was and with such light hair, must certainly be very high caste, and must expect to be fleeced accordingly. Although to be so highly taxed for my fair complexion could not be otherwise than delightful, I was not to be persuaded to pay more on that score, than a rupee to each as a "white man's" tax; and I finally had the satisfaction of hearing myself pronounced to be a "perfect gentleman."

However, when I thought of the exquisite enjoyment of nature I had derived from my five-hours' ride, I thought the fare well laid out, and in spite of the heat and fatigue I was sorry when, at about four in the afternoon, the light-house of Galle came in sight. Soon after the "mail coach" rattled over the drawbridge of the old moat, and then through a long dark barbican, pulling up finally in front of the elegant "Oriental Hotel" of Punto Galla.

CHAPTER IX

POINT DE GALLE

GALLE, the most famous and important town of Ceylon from a very remote antiquity, is proudly situated on a rocky promontory, lying to the west of a bay which opens to the south. The Cinghalese name Galla, means rocks, and has no connection with the Latin word Gallus, as the Portuguese, the first masters of the island, assumed; a memorial of this false etymology still exists on the old walls in the form of a moss-grown image of a cock, dated 1640.

We infer from the concurrent evidence of many writers of classic times, that Galle was an important trading port more than two thousand years ago, and probably through a long period was the largest and richest place in the whole island. Here the Eastern and Western worlds met half way; the Arabian merchantmen, sailing eastwards from the Red Sea and the Persian Gulf, here held commerce with the Malays of the Sunda Archipelago, and the still more remote Chinese. The Tarshish of the ancient Phoenicians and Hebrews can only have been Galle; the apes and peacocks, ivory and gold, which those navigators brought from the legendary Tarshish, were actually known to the old Hebrew writers by the same names as they now bear among the Tamils of Ceylon, and all the descriptions we derive from them of the much-frequented port of Tarshish apply to none of the seaports of the island, but the Rock point—Punto Galla.

The natural advantages of the geographical situation of Galle, close to the southern end of Ceylon, in latitude 6° N., of its climate and

topographical position, and especially of its fine harbour, open only to the south, are so great and self-evident, that they would seem to give this beautiful town the pre-eminence above all the other seaports in the island. But the unflagging efforts of the English Government to maintain the supremacy of Colombo at any cost, particularly by more efficient communication with the interior, have of late years seriously damaged the prosperity of Galle, not to speak of its greater nearness to the central coffee-districts. I have before observed that the greater part of the export traffic has been transferred to Colombo, and the noble harbour of Galle is no longer what it used to be. However, Galle cannot fail to keep its place as only second in importance to Colombo, and particularly as the natural depot for the export of the rich products of the southern districts. Of these products the principal are the various materials derived from the Cocoa-palm; cocoa-nut oil, which is very valuable; Coir, the tough fibrous husk of the nut, which is used in a variety of ways, as for mats and ropes; palm sugar, from which arrak, a fermented liquor, is distilled, etc. Formerly the traffic in gems was also very considerable, and more recently the export of graphite or plumbago. When the bill shall at last be passed for extending the railway from Caltura to Galle, and when some of the rocks and coral-reefs which render parts of the harbour unsafe shall have been blown away by dynamite, the vanished glories of Galle may be restored and even enhanced.

The situation of Point de Galle is truly delightful, and as a matter of course this spot has been highly lauded in almost all former accounts of travels in Ceylon, being the place where Europeans used first to land. The whole of the point which juts out towards the south is occupied by the European town, or "Fort," consisting of store-houses one story high, surrounded by pillared verandahs, and shaded by projecting tiled roofs. Pretty gardens lie between them, and serve no less to decorate the town than the wide avenues of shady Suriya trees (*Thespesia populnea*) and Hibiscus (*H. rosa sinensis*). These here take the place of roses; they are densely covered with bright green leaves and magnificent red blossoms, but the tree is known among the English by the prosaic name of the Shoe-flower, because its fruits, boiled down, are used for blacking.

Among other public buildings we remark the Protestant church, a pretty Gothic structure, on one of the highest points of the Fort-hill. Its thick stone walls keep the interior, which is lofty, delightfully cool, and it is surrounded by fine trees, so that it was deliciously refreshing

when, one burning Sunday morning, tired with a long walk, I could take refuge from the scorching sunbeams in this shady retreat.

Opposite to the church are the public offices of Galle, in what is known as the Queen's House, which formerly was the residence of the Dutch, and subsequently of the English, governor. Travellers of rank, or if provided with particular recommendations, were here hospitably entertained by the governor. For this reason, the government buildings of Galle and their immediate neighbourhood were usually the first spot in Ceylon to be described and admired in old books of travels. Among German travellers, Hoffmann and Ransonnet both have been at home there. Within the last few years, however, the Queen's House has become private property, and is now the head-quarters of the chief merchant-house in Galle—Clark, Spence, & Co. I had been warmly recommended to Mr. A. B. Scott, the present head of the house, by my friend Stipperger, and was received by him with the most liberal hospitality. He placed two of the best of the fine spacious rooms of the Queen's House at my disposal, with a delightful, airy verandah, and did everything in his power to render my visit to Galle as agreeable and as profitable as possible. Not only did I soon feel myself at home in Mr. Scott's amiable family circle, but in him I made acquaintance with an English merchant whose many and various accomplishments are worthy of his prominent social standing. He is now consul for several Powers, and it is only to be lamented that he should not also represent the interests of Germany. Mr. Scott lived in Germany for many years, for a long time at the commercial school of Bremen, and highly appreciates German literature and German science. So, as I was so fortunate as to be regarded by him, for the time being, as the representative in person of German science, I enjoyed the benefit of his favour and help to the utmost. This led me once more to doubt whether I should not do well to avail myself of his kind offer, and to set up my zoological studio for several weeks in Queen's House, instead of moving to Belligam. Here, at any rate, I should live surrounded by every European comfort and pleasant and family society, and be far better off than in the rest-house of Belligam, in the midst of natives; I should also carry out many of my scientific schemes with greater ease and convenience. However, I steadfastly resisted the alluring temptation, and was amply rewarded for my firmness by becoming far more intimately acquainted with the primitive life of Ceylon and of its natives in Belligam, than I could have been in the civilized atmosphere of Galle.

The few days I now spent at Galle, and two or three more which I spent in Mr. Scott's house on my return from Belligam, were, by his indefatigable help, turned to such good account that, in spite of the shortness of the time, I gained some knowledge of the beauties of the neighbourhood, and of the riches of its magnificent coral-reefs. One of Mr. Scott's two carriages was constantly at my disposal for expeditions by land, and his capital boat pulled by three Malabars for excursions by sea. Mr. Scott also made me acquainted with several English families of position, who could be helpful to me in my scientific aims; and to Captain Bayley and Captain Blyth I remain greatly indebted.

The first and shortest expedition that can be made by a stranger in Galle, is a walk round the walls of the Fort. These walls, very substantially built of brick by the Dutch, have on all sides a perpendicular fall into the sea, and on the eastern side the view from thence is beautiful—over the harbour and the wooded hills which enclose it, and the blue hill-country beyond. On the south and west the marvellous coral-reefs lie at the very foot of the walls, girdling round the promontory on which the Fort is built; and at low tide the beautifully coloured creatures show plainly through the shallow water like beds of submarine flowers. These coral gardens are particularly lovely near the lighthouse, at the south-western angle of the Fort.

Two gloomy old gates, whose stone pillars, like the chief part of the walls themselves, are overgrown with ferns and mosses, lead from the interior to the open country. The eastern gate leads out at once on to the quay of the harbour and the mole which juts out to the east. The northern gate opens on to the green Esplanade, a broad tract of grassy level, used for recreation and exercise. It divides the Fort from the native town, which consists principally of native huts and bazaars; part of it extends eastward, along the quay of the harbour, and another part follows the strand on the Colombo Road. On both sides it is presently lost, without any distinct limit line, in little groups of houses or isolated huts scattered about among the cocoa-nut groves, and here and there climbing the sylvan garden which clothes the hill-sides. In a most beautiful situation at the top of one of the nearest hills, opposite the Fort, stands the Roman Catholic church; in connection with this are a catholic school and mission. Padre Palla, the director of this establishment—whose highly respected predecessor I knew by name from the accounts of former travellers—I found to be a native of Trieste, a most

agreeable and highly cultivated man, and a remarkable musician. It was a great pleasure to him to find that I could speak to him in his own language, and was familiar with Trieste and Dalmatia. The well-kept garden of this mission, like all the gardens in the Eden-like neighbourhood of Galle, is full of the loveliest products of the tropics; a botanist—a lover of flowers even—loses his heart at every turn.

Still, to my thinking, the most enchanting spot in the neighbourhood of Galle is Villa Marina, belonging to Captain Bayley. This enterprising and many-sided man was at one time a ship's captain, and is now the agent in Galle for the P. and O. company. His fine natural taste led him to choose for his house a site of almost unequalled beauty. About half-way along the north shore of the wide curve which encloses the noble bay of Galle, a few tall rocks of gneiss run far out to sea, and a group of rocky islets, thickly clothed with pandanus, lie just beyond them. Captain Bayley purchased the most easterly of these islets, and there built himself a little residence, laying out the ground with much taste and judgment in availing himself of the accidents of the situation—a perfect little "Miramar." From the west windows of the bungalow and from the terrace below there is a view of the town opposite and of the harbour in front, which is unsurpassed by any other scene in the neighbourhood. The lighthouse on the point, and the Protestant church in the middle of the Fort, stand out with great effect, particularly in the golden light of the morning sun. A picturesque middle distance is supplied by the black islets of rock, fantastically overgrown with clumps of luxuriant screw-pine, and their shores covered with Cinghalese fishing-huts. In the foreground, the riven black rocks of the island, on which the villa stands, lie piled in towering and grotesque masses; or, if we turn to seek some less wild accessories, we have part of the beautiful garden with its tropical forms.

Among the many ornaments of this garden I was particularly interested to find several fine specimens of the Doom palm (*Hyphaene thebaica*). The stalwart stem of this species does not, as in most palms, form a tall column, but forks like the stem of the *Dracaena*, and each branch has a crown of fan-shaped leaves. This palm grows principally in Upper Egypt, but I had already seen it at the Arab town of Tur, at the foot of Mount Sinai, and it is represented in my work on the Red Sea corals (plate iv, p. 28). How surprised I was, then, to find it here under an aspect so altered that I could scarcely recognize it. Adaptation to perfectly different conditions of existence have made the Doom palm of

Egypt quite another tree in Ceylon. The trunk is developed to at least double the thickness, much larger than in its native land; the forked branches are more numerous but shorter and more closely grown; the enormous fan leaves are much larger, more abundant and more solid; and even the flowers and fruit, so far as my memory served me, seemed to be finer and more abundant. At any rate, the whole habit of the tree had so greatly changed in the hothouse climate of Ceylon that the inherited physiognomy of the tree had lost many of its most characteristic features. And all this was the result of a change of external condition and consequent adaptation, more particularly of the greater supply of moisture which had been brought to bear, from its earliest youth, on a plant accustomed to the dry desert-climate of North Africa. These splendid trees had been raised from Egyptian seed, and in twenty years had grown to a height of thirty feet.

A large portion of the ground was occupied by a magnificent fern garden. Ferns, above everything, thrive in the hot damp air of Ceylon; and Captain Bayley had collected not merely the finest indigenous varieties, but a great number of interesting foreign tropical species. Here, at a glance, could be seen the whole wealth of various and elegant forms, developed by the feathery fronds of these lovely Cryptogams, with tree-ferns, Sellaginallae and Lycopodia. Not less charming were the luxuriant creepers, hanging in festoons from handsome baskets fastened to the top of the verandah: orchids, *Begonia*, *Bromelia*, etc.

But for zoologists, as well as for botanists, this Miramar of Galle is a captivating spot. A small menagerie attached to the house contains a number of rare mammalia and birds; among others, a New Holland ostrich (*Emu*), several kinds of owls and parrots, and an indigenous ant-eater (*Manis*). This, as well as several rare fishes, Captain Bayley most kindly presented to me, and subsequently sent me a pair of loris (*Stenops*), as a Christmas gift, to Belligam, which proved very interesting. But more attractive to me than even these rare creatures, were the magnificent corals, which grew in extraordinary abundance on the surrounding rocks; even the little inlet used by Captain Bayley as a dock for his boat, and the stone mole where we disembarked, were closely gemmed with them, and in a few hours I had added considerably to my collection of corals. A very large proportion of the multifarious forms of animal life, which are distributed over the coral-reef near Galle, were to be seen crowded together in this narrow space—huge black sea urchins and red starfish, numbers of crustaceans and fishes, brightly coloured mollusca,

strange worms of various classes, and all the rest of the gaudy population that swarms on coral reefs and lurks between the branches. For this reason, Captain Bayley's bungalow—which he now is anxious to sell, as he has moved to Colombo—is particularly well-fitted to be a zoological station, and is only half an hour's distance from the conveniences of the town.

If we walk along the shore still farther to the east, round the bay of Galle, and then mount a little way, we reach a higher point, whence another splendid view is to be had over the town and harbour, and which is justly named "Buona Vista." Here a Protestant minister, the Rev. Philip Marks, has built a pretty villa and established a mission. The lofty wall of hills which runs from this point southwards, forming the eastern rampart of the harbour, is thickly wooded, and terminates in a steep cliff-like promontory. It is said, that some years since it was proposed to fortify this point, which is just opposite the lighthouse. The project, however, was abandoned, though a few iron cannon still peep out among the rank garlands of creepers. A riotous troop of monkeys were at play there, when I scrambled up one Sunday afternoon. A narrow path, which I followed yet further, led me southwards along the steep rock-bound shore and through a thick wood, full of magnificent pandanus and creepers. It was divided in one place by a deep ravine, at the bottom of which a dancing brook leapt down to the sea. Just above its mouth the stream falls into a natural basin of rock—a favourite bathing place with the natives. As I came out suddenly from the wood I surprised a party of Cinghalese of both sexes, who were splashing merrily in this basin.

A similar natural tank—much larger in the first instance, and artificially enlarged—is to be found at the bottom of the rocky promontory before mentioned, nearly opposite the lighthouse. This is known as the "Watering-place," because its abundant supply of fresh water provides most of the ships with drinking water. The steep cliffs which surround this basin are overgrown with thorny wild date-palms (*Phoenix sylvestrix*), with white-flowered *Asclepias*, and dull green *Euphorbia* Trees. This *Euphorbia* (*antiquorum*) resembles a gigantic cactus, and produces its stiff branches in regular whirls; this and the pandanus on stilts are among the strangest growths of these woods.

Very different in character from these wild rocky hills to the south-east of Galle are the undulating hill and dale which extend to the north

of the town. Here, again, we meet with the idyllic characteristics of the south-west coast. The favourite excursion in this direction is to the Hill of Wackwelle, the top of which is reached by a beautiful high road, through cocoa-nut groves. It is constantly visited by picnic-parties from the town, and latterly an ingenious speculator has set up a restaurant, and charges each visitor sixpence, even if he eats nothing, for enjoying the view. The landscape principally consists of the broad wooded valley of the Gindura, which falls into the sea at about half an hour's ride to the north of the city. The river winds like a silver riband through the bright green rice fields—paddy-fields as they call them—which cover the bottom of the wide valley; the slopes on all sides are covered with magnificent trees, the home of swarms of monkeys and parrots. In the distance the blue peaks of the central hills are visible. The most conspicuous of these from Galle is a fine peak called, from its singular form, "the Haycock;" it certainly resembles a somewhat bell-shaped stack, and it is visible at a great distance, serving as a landmark for approaching ships.

Still, what far more interested me than the terrestrial gardens in the neighbourhood of Galle, were the submarine coral-gardens which surround the Fort; I can only deeply lament that I was unable to devote several weeks to their study instead of a few short days. Ransonnet, the Viennese painter, was, in this respect, more fortunate than I; he was able thoroughly to investigate the coral banks of Galle during several weeks, aided, too, by many efficient accessories, particularly by having a good diving-bell at his disposal. In his work on Ceylon* he has written a good description of what he saw, and has given a most picturesque and vivid idea of that mysterious world of sea creatures in four coloured plates, for which he made the sketches under water in a diving-bell.

Nine years since, in 1873, when I made an excursion among the coral reefs of the Sinai coast, and for the first time had a glimpse of the wonderful forms of life in their submarine gardens of marvels, they had excited my utmost interest; and in a popular series of lectures on Arabian corals (published with five coloured plates), I had endeavoured to sketch these wonderful creatures and their communities, with various other animals. The corals of Ceylon, which I first became acquainted with here at Galle, and subsequently studied more closely at Belligam,

* Ceylon Skizzen, says Seiner Bewohner, etc; by Baron Ransonnet Villez Braunschweig, 1868.

reminded me vividly of that delightful experience, and at the same time afforded me a multitude of new ones. For though the marine fauna of the Indian seas is, on the whole, nearly allied to the Arabian fauna of the Red Sea—many genera and species being common to both—yet the number and variety of forms of life is considerably greater in the vast basin of the Indian ocean with its diversified coast, than in the pent-up waters of the Arabian Gulf, with its uniform conditions of existence. Thus I found the general physiognomy of the coral reefs in the two situations different, in spite of many features in common. While the reefs at Tur are, for the most part, conspicuous for warm colouring—yellow, orange, red, and brown—in the coral gardens of Ceylon, green predominates in a great variety of shades and tones: yellow-green *Alcyonia*, growing with sea-green *Heteropora*, and a malachite-like *Anthophylla* side by side with olive-green *Millepora*; *Madrepora*, and *Aseraea* of emerald hue with brown-green *Montipora* and *Maeandrina*.

Ransonnet had already pointed out (*op. cit.*, p. 134) how singularly and universally green prevails in the colouring of Ceylon. Not only is the greater portion of this evergreen isle clothed with an unfading tapestry of rich verdure, but the animals of the most widely dissimilar classes, which live in its woods, are conspicuous for their green colouring. This is seen in all the commonest birds and lizards, butterflies and beetles, which are of every shade of brilliant green. In the same way the innumerable inhabitants of the sea, of all classes, are coloured green such as many fishes and crustacea, worms (*Amphinome*), and sea anemones (*Actinia*): indeed, creatures which elsewhere seldom or never appear in green livery wear it here; for instance, several starfish (*Ophiura*), sea-urchins, sea-cucumbers; also some enormous bivalves (*Tridacna*), and Brachiopoda (*Lingula*), and others. An explanation of this phenomenon is to be found in Darwin's principles, particularly in the law of adaptation by selection of similar colouring or sympathetic affinity of colour, as I have elucidated it in my "History of Creation," vol. i. p. 264.* The less the predominant colouring of any creature varies from that of its surroundings, the less will it be seen by its foes, the more easily can it steal upon its prey, and the more it is protected and fitted for the struggle for existence. Natural selection will, at the same time, constantly confirm the similarity between the prevailing colour of the animal and of its

* "The History of Creation." The translation revised by E. Ray Lankester, M. A., F. R. S. Kegin Paul, Trench and Co.

surroundings, because it is beneficial to the animal. The green coral banks of Ceylon, with their preponderance of green inhabitants, are as instructive as bearing on this theory as the green land animals are which people the evergreen forests and thickets of the island; but in purity and splendour of colouring, the sea creatures are even more remarkable than the fauna of the forests.

It would, however, be a mistake to suppose that this prevailing green hue produces a monotonous uniformity of colouring. On the contrary, it is impossible to weary of admiring it, for, on the one hand, the most wonderful gradations and modifications may be traced through it and, on the other, numbers of vividly and gaudily coloured forms are scattered among them. And just as the gorgeous red, yellow, violet, or blue colours of many birds and insects look doubly splendid in the dark green forest of Ceylon, so do the no less brilliant hues of some marine creatures on the coral banks. Many small fishes and crustaceans are particularly distinguished by such gaudy colouring, with very elegant and extremely singular markings, as they seek their food among the ramifications of the coral trees. Some few large corals are also conspicuously and strikingly coloured; thus, for instance, many *Pocilloporae* are rose-coloured, many of the *Astraeidae* are red and yellow, and many of the *Heteroporae* and *Madreporae* are violet and brown, etc. But, unfortunately, these gorgeous colours are, for the most part, very evanescent, and disappear as soon as the coral is taken out of the water, often at a mere touch. The sensitive creatures which have displayed their open cups of tentacles in the greatest beauty, then suddenly close and become inconspicuous, dull, and colourless.

But if the eye is enchanted merely by the lovely hues of the coral reef and its crowded population, it is still more delighted by the beauty and variety of form displayed by these creatures. Just as the radiated structure of one individual coral polyp resembles a true flower, so the whole structure of the branched coral stock resembles the growth of plants, trees, and shrubs. It was for this reason that corals were universally supposed to be really plants, and it was long before their true nature as animals was generally believed in.

These coral gardens display, indeed, a lovely and truly fairy-like scene as we row over them in a boat at low tide and on a calm sea. Close under the Fort of Galle the sea is so shallow that the keel of the boat grates on the points of the stony structure; and from the wall of the

Fort above, the separate coral growths can be distinguished through the crystal water. A great variety of most beautiful and singular species here grow close together on so narrow a space that in a very few days I had made a splendid collection.

Mr. Scott's garden, in which my kind host allowed me to place them to dry, looked strange indeed during these days. The splendid tropical plants seemed to view with the strange marine creatures who had intruded on their domain for the prize for beauty and splendour, and the enchanted naturalist, whose gladdened eye wandered from one to the other, could not decide whether the fauna or the flora best deserved to take it. The coral animals imitated the forms of the loveliest flowers in astonishing variety, and the orchids, on the other hand, mimicked the forms of insects. The two great kingdoms of the organized world seemed here to have exchanged aspects.

I procured most of the corals, which I collected in Galle and Belligam, by the help of divers. These I found here to be quite as clever and capable of endurance as the Arabs of Tur nine years before. Armed with a strong crowbar, they uprooted the limestone structure of even very large coral stocks from their attachment to the rocky base, and raised them most skilfully up to the boat. These masses often weighed from fifty to eighty pounds, and it cost no small toil and care to lift them uninjured into the boat. Some kinds of coral are so fragile that, in taking them out of the water, they break by their own weight, and so, unfortunately, it is impossible to convey many of the most delicate kinds uninjured to land. This is the case, for instance, with certain frail *Turbinariae*, whose foliaceous stock grows in the shape of an inverted spiral cone; and of the many-branched *Heteropora*, which resembles an enormous stag's antler, with hundreds of twigs.

It is not from above, however, that a coral reef displays its full beauty, even when we row close over it, and when the ebb-tide has left the water so shallow that its projections grind against the boat. On the contrary, it is essential to take a plunge into the sea. In the absence of a diving-bell I tried to dive to the bottom, and keep my eyes open under water, and after a little practice I found this easy. Nothing could be more wonderful than the mysterious green sheen which pervades this submarine world. The enchanted eye is startled by the wonderful effects of light, which are so different from those of the upper world, with its warm and rosy colouring; and they lend a double interest and strangeness to the forms and movements of the myriads of creatures that swarm

among the corals. The diver is in all reality in a new world. There is, in fact, a whole multitude of singular fishes, crustacea, mollusca, radiata, worms, etc., whose food consists solely of the coral-polyps, among which they live; and these coral-eaters—which may be regarded as parasites in the true sense of the word—have acquired, by adaptation to their peculiar mode of life, the most extraordinary forms, more especially are they provided with weapons of offence and defence of the most remarkable character.

But, just as it is well known that "no man may walk unpunished under the palms," so the naturalist cannot swim with impunity among the coral banks. The Oceanides, under whose protection these coral fairy bowers of the sea flourish, threaten the intruding mortal with a thousand perils. The *Millepora*, as well as the *Medusae* which float among them, burn him wherever they touch, like the most venomous nettles; the sting of the fish known as *Synanceia* is as painful and dangerous as that of the scorpion; numbers of crabs nip his tender flesh with their powerful claws; black sea-urchins (*Diadema*) thrust their foot-long spines, covered with fine prickles set the wrong way, into the sole of his foot, where they break off and remain, causing very serious wounds. But worst of all is the injury to the skin in trying to secure the coral itself. The numberless points and angles with which their limestone skeleton is armed, inflict a thousand little wounds at every attempt to detach and remove a portion. Never in my life have I been so gashed and mangled as after a few days of diving and coral-fishing at Galle, and I suffered from the consequences for several weeks after. But what are these transient sufferings to a naturalist when set in the scale against the fairy-like scenes of delight, with which a plunge among these marvellous coral-groves enriches his memory for life!

CHAPTER X

BELLIGAM

BELLA gemma, "lovely gem!" How often do I dream of you! Some months are already past since I had to quit you, and still, how often does the never-to-be-forgotten picture rise before me, bringing a host of delightful memories! And how still more fondly will it smile on me in the future, when the tender and mysterious haze of distance shall lend enchantment to the view of your loveliness! Verily if Ceylon is to be extolled as the "diadem of India," you deserve to be called the brightest jewel in that crown—the pearl of Taprobane!

The kindly reader will, I trust, forgive me when I here confess that the name of this spot is, in fact, differently spelt, and has a quite different meaning from *Bella Gemma*. It is commonly called Belligam; and the Cinghalese name was originally Veligama, meaning the sand-village (*Veli*=sand, *gama*=village). But the name, as the English pronounce it, sounds like Belligamm, so the addition, and the substitution of an *a* give us the Italian words, which are so fitly applied to the beauty of the spot. In my recollections, at any rate, the picture of "Bella-Gemma" is inseparable from the idea of a choice jewel in Nature's casket, while the sandy shore which gave Veligama its name fades out of sight.

Of course I had acquired the best information procurable in Galle and Colombo as to the resources of Belligam, when once I had decided on fixing my zoological quarters there for a few months. But in spite of all my inquiries, I could learn very little beyond the facts that the village was very beautiful, situated in the midst of Cocos woods, that the

sheltered bay was rich in corals, and that the government rest-house was tolerably good; on the negative side I was told that neither a single European nor any trace of European comfort or civilization was to be found there. All this, as I soon found, was fully justified. Thus a mystical veil of romance and adventure hung over my immediate future, and I confess that it was not without a faint, uncanny feeling of insecurity and utter isolation that, on December the 12th, I turned my back on the European culture of Galle. I had already seen in Colombo, and yet more in Kandy, how closely, cheek by jowl as it were, primitive nature and the varnish of civilization lie in Ceylon, and how a very few miles set a gulf between the dense primaeval forest and the crowded town. Here, in the southern corner of the island, I might expect to find this even more strongly marked. Thus all my hopes were founded, on one hand, on the efficacy of my government letters, and on the other, on my often tested good fortune as a traveller, which had never left me in the lurch in any of my adventurous experiments.

So it was with excited anticipations that, on the morning of December 12th, I mounted the light carriage which was to carry me along the south coast as far as Belligam. It was five in the morning, and, of course, still quite dark when I left the Fort, and drove along the harbour through the native town to the southwards. The Cinghalese, wrapped in white cotton sheets, lay peacefully sleeping on palm-mats in front of the dingy huts; there was not a sound to be heard, the deepest silence and solitude reigned over the lovely landscape, which was transformed at a touch as the magic wand of the rising sun suddenly fell on the scene. The first quivering rays woke the sleeping palm-grove to life and stir; here and there a bird piped its call from the top of a tree; the pretty little palm-squirrel darted from its nest and began its morning gambols up and down the cocoa-nut trunks, while the slothful Kabragoya, the huge green lizard (*Hydrosaurus*), stretched its lazy length on the banks of the ditches. In the gardens more remote from the town, the noisy monkeys sprang about among the fruit-trees from which they were stealing their breakfast; and soon the natives, too, began to rouse themselves, whole families taking their morning bath, *sans gene*, by the road-side.

One of the strange experiences which take the European by surprise as he gets near the equator is the absence of twilight, that soft hour of transition between day and night which plays so important a part in our poetry and our views of nature. Hardly has the sun, which gilds the whole

landscape with its splendour, vanished in the purple ocean than black night spreads its brooding wing over land and sea; and it shrinks back no less suddenly in the morning, at the advent of day. Aurora, the rosy fingered dawn, has no empire here. However, the radiant young day comes forth all the more glorious, and the bright morning light looks all the fresher as it glides in a myriad of broken flecks between the finely cut palm leaves. The dew-drops hang like pearls at the tips of the plumy fronds, and the sheeny surface of the broad pale-green banana and *pothos* leaves reflect the rays like mirrors. Then the light morning breeze sets all these graceful creatures in waving motion and brings us a refreshing air. Everything is full of renewed life and vigour, colour and splendour.

The fifteen miles of good road between Galle and Belligam display exactly the same characteristics as were formerly described in speaking of the road from Colombo to Galle, being, in fact, the southern continuation of that splendid coast-road. Only here, farther south, the noble cocoa-nut groves are, if possible, finer and more gorgeous than ever. Quantities of creepers hang in lovely garlands from palm to palm, while, the clumps of bananas, papaya, and bread-fruit trees near the huts, the graceful manihot and yam shrubs in the hedges, and the gigantic caladiums and *colocasia* by the road-side, seemed to me even more huge and magnificent than before. The wood, too, is frequently diversified by small tanks, covered with lotos and other water plants, or intersected by running streams, their banks crowded with elegant ferns. Here and there is a rocky rise, covered with the screw-pine or fragrant pandanus, and alternately with these a smiling strand overgrown with beautiful red bind-weeds, white lilies, and other lovely flowers. At the mouth of each little rivulet which crosses the road the waving bamboos and the dark-green mangrove thicket reappear, and the curious Nipa-palm, with no stem, raising its elegant crown of plumes just above the water.

The eye is never weary of feasting on the beautiful forms of tropical vegetation, and I was almost sorry when, after a few hours of good driving, my Tamil coachman pointed to a promontory some distance off, a rocky spit forming a bay, with the words "Behind there Vellgama." Before long the scattered huts became more numerous, and arranged themselves into a village street, with bright green rice fields spreading away on each side, broken by beautiful groves. The stone of which the walls were built consisted, in great part, of fine blocks of coral. At a turn in the road, on a height to the left, stood a handsome Buddhist

temple, called Agrabuddhi Gani, a famous place of pilgrimage from time immemorial; and to the right, just beyond, stands a colossal figure, carved out of the black rock, of a king of ancient fame, Cutti Raja.* The niche is shaded by kittool palms, and the prince is represented with scale armour on his gigantic person and a mitre on his head. He is celebrated in history, not as a conqueror but as a benefactor to the island, for he is said to have first introduced the culture and use of the Cocos palm. Soon after this we drove through a little bazaar, and a few paces farther on my chaise drew up before the anxiously expected rest-house of Belligam.

A dense and dusky crowd of natives were standing, full of curiosity, round the gate of the fence which enclosed the garden of the rest-house, and among them I observed a group of high-class natives in full state. The Governor of the southern district—or government agent, as his modest title expresses it—had, in obedience to the Governor's instructions, given notice of my arrival to the village authorities and desired them to make me welcome, and be of assistance to me in every possible way. The headman of the place, or moodliar, a fine man of about sixty years, with a kind good-natured face and thick beard and whiskers, came up to me and greeted me with a solemn address in broken English, assured me in the politest and most dignified manner that his whole *Korle*, or village-district, felt itself honoured by my presence, and that its 4000 brown inhabitants would make every effort to render my stay agreeable; he himself was at all times at my service. A grand rattle of drums, performed by a row of tom-tom-beaters squatting in the background, gave emphasis to the close of the solemn and official address.

After I had responded and returned thanks, the high functionaries who composed the official suite of the moodliar took their turn—the second headman, or Aretshi, the tax-gatherer or collector, and the doctor—and after these important government officials came several of the chief inhabitants of the village, all striving in the most amiable way to manifest their good-will and their anxiety to be of use. A rattle on the tom-toms at the end of each speech served to ratify their promises. The doctor and collector, who both spoke English fluently, served as interpreters, and enabled me to understand the Cinghalese addresses. The assembled multitude listened in attentive silence, studying my person and property with the deepest interest.

* Custia Raja; see Tennent's Ceylon, vol. i. p. 436 and vol. ii. p. 113.

The whole ceremony was all the more amusing because the costume of most of the personages of any position in Belligam was a comical mixture of the European and the Cinghalese—the former for the upper and the latter for the lower part of the person. Beginning at the top, a tall English chimney-pot charmed the eye—of all head coverings beyond a doubt the most hideous and inefficient. However, as the Cinghalese see Europeans wear this cylindrical head-piece on all solemn occasions as the indispensable symbol of birth and culture, never abandoning it even in the greatest heat, they would regard it a serious breach of etiquette to appear without the singular decoration. The good-humoured brown face, which is but little shaded by this narrow-brimmed chimney-pot, is fringed by a fine black beard, which is trimmed in the middle of the chin and supported on each side by an enormously high and pointed white shirt-collar; below comes a coloured silk scarf tied in a bewitching bow. Nor is the black frock-coat of ceremony absent, with narrow tails, and underneath this the white waistcoat with jewelled buttons and gold chains. And as a tail-piece instead of trousers, we have the primitive national covering of the nether man of a Cinghalese, the red or parti-coloured comboy, a sort of wide loin-cloth, a good deal resembling a peasant girl's red stuff petticoat. The delicate small feet which are visible below are either bare or protected merely by sandals.

After this friendly reception, which promised for the best, my new protectors led me in solemn procession through the gate and into the lovely garden of the rest-house, which was enclosed by a low white wall. The first appearance of this residence exceeded my expectations; it was a handsome stone building, one story high, and surrounded by a red-tiled verandah supported on white pillars. The wide lawn in front of it to the east is graced by a noble teak-tree, which stands in the middle, and of which the columnar trunk must be at least eighty or ninety feet high. The leguminous creepers which climb up it hang in elegant festoons from the spreading boughs. On the south side of the rest-house a few cows were pasturing contentedly on the green grass, which is here shaded by half a dozen splendid old bread-fruit trees. The massive gnarled trunks of these trees and their umbrageous crown of far-reaching branches remind us of some very huge specimen of the European oak, while their colossal and deeply cut leaves of a dark shining green, and large, light green fruit give them a much grander and more imposing aspect.

Between the dark tops of these fine specimens of the *Artocarpus* opens a pleasing vista over the sunlit and almost circular bay of Belligam, across which numbers of fishing-barks are just now returning homewards in full sail; the long low rocky promontory opposite, to the south, is clothed partly with jungle and partly with cocoa-nut woods; the huts of the fishing village of Mirissa stand out against its white strand. Immediately in front of the rest-house, not two minutes from the shore, lies a pretty rocky islet, Ganduva, entirely covered with the most beautiful cocoa-nut palms.

Going farther round the house we come upon a fruit garden full of bananas and manihot shrubs, lying to the west, on the slope of a densely wooded hill behind the bungalow. An outbuilding at the bottom contains the kitchen and some store-rooms, which I found very convenient for my collections. The hill rises on the north side of the garden to a steep acclivity, covered by the thickest wood swarming with monkeys and parrots, and its lower slopes are overgrown with luxuriant shrubs and a perfect carpet of tangled creepers.

Charmed at first sight with the situation and idyllic surroundings of the rest-house, I eagerly proceeded up the side steps on the east-front to go inside. Here, at the bottom of the steps, I was met with another address, half in English and half in Pali, from the steward of my new quarters, the old rest-house keeper. With his arms crossed on his breast and bending low, almost kneeling, the worthy old man approached me with abject humility and implored me to look favourably on his modest roof; all that the village could yield in rice and curry, in fruit and fish, he would offer me in abundance, and there was no lack of cocoa-nuts and bananas. With regard to other things, he would provide everything that was to be had, and the most ready and willing service. These and many other good things did the old man promise me in a well-set speech spiced with a few philosophical aphorisms. As I looked at his kindly old face, with a short, wide turned-up nose below a pair of keen little eyes, and a long fuzzy silver beard under his thick lips, I was suddenly reminded of the well-known bust of Socrates, which in so many details resembles the head of a satyr; and as I could never remember my philosophical host's long Cinghalese name, I named him Socrates out of hand. This appellation was subsequently justified by the shrewd old man proving himself a true philosopher in many ways; and I may add, too, that he was decidedly shaky on the question of cleanliness, as, if I mistake not, his Greek prototype was before him.

It really seemed as though I should be pursued by the familiar aspects of classical antiquity from the first moment of my arrival at my idyllic home. For, as Socrates led me up the steps into the open central hall of the rest-house, I saw before me, with uplifted arms in an attitude of prayer, a beautiful naked, brown figure, which could be nothing else than the famous statue of the "Youth adoring." How surprised I was when the graceful bronze statue suddenly came to life, and dropping his arms fell on his knees, and after raising his black eyes imploringly to my face bowed his handsome face so low at my feet that his long black hair fell on the floor! Socrates informed me that this boy was a Pariah, a member of the lowest caste, the Rodiyas, who had lost his parents at an early age, so he had taken pity on him. He was told off to my exclusive service, had nothing to do the live-long day but to obey my wishes, and was a good boy, sure to do his duty punctually. In answer to the question what I was to call my new body-servant, the old man informed me that his name was Gamameda (from Gama, a village, and Meda=the middle). Of course, I immediately thought of Ganymede, for the favourite of Jove himself could not have been more finely made, or have had limbs more beautifully proportioned and moulded. As Gamameda also displayed a peculiar talent as butler, and never allowed any one else to open me a cocoa-nut or offer me a glass of palm-wine, it was no more than right that I should dub him Ganymede.

Among the many beautiful figures which move in the foreground of my memories of the paradise of Ceylon, Ganymede remains one of my dearest favourites. Not only did he fulfil his duties with the greatest attention and conscientiousness, but he developed a personal attachment and devotion to me which touched me deeply. The poor boy, as a miserable outcast of the Rodiya caste, had been from his birth the object of the deepest contempt of his fellowmen, and subjected to every sort of brutality and ill-treatment. With the single exception of old Socrates, who was not too gentle with him either, no one perhaps had ever cared for him in any way. He was evidently as much surprised as delighted to find me willing to be kind to him from the first.

He was especially grateful for a small service I was able to render him in the following way. A few days before my arrival he had run a thorn deep into his foot; as he came home it had broken off, and the point was left sticking in the wound. I removed it by a rather delicate operation, and treated it with carbolic acid with so much success that in a short time it healed perfectly. After this the grateful Ganymede

Haeckel in Ceylon 1881

Photograph from the Collection in the Ernst Haeckel House of the University of Jena

followed me like a shadow, and tried to read my wishes in my eyes. Hardly was I out of bed in the morning when he was standing before me with a freshly opened cocoa-nut, out of which he poured and offered me a cool morning draught of the milk. At dinner he never took his eyes off me, and always knew beforehand what I should want. When I was at work he cleaned my dissecting instruments and the lenses of the microscope. But Ganymede was never so happy as when I took him out in the cocoa-nut grove, or on the sea-shore, to paint and collect, shoot and fish. When I allowed him to carry my paint-box or photographic camera, my gun or a tin for botanical specimens, he would walk behind me radiant with satisfaction, and glancing proudly round him at the astonished Cinghalese, who looked upon him as an outcast Rodiya, and could not understand his having attained to such honour. My interpreter William was especially jealous and indignant; he took every opportunity of blackening Ganymede's character, but soon arrived at the conclusion that I would allow my favourite to come to no harm. I owe many beautiful and valuable contributions to my museum to Ganymede's unfailing zeal and dexterity. With the keen eye, the neat hand, and the supple agility of the Cinghalese youth, he could catch a fluttering moth or a gliding fish with equal promptitude; and his nimbleness was really amazing when, out hunting, he climbed the tall trees like a cat, or scrambled through the densest jungle to recover the prize I had killed.

The Rodiya caste, to which Gamameda belonged, is actually of purely Cinghalese origin, but it is despised as the lowest of all, like the Pariahs by the other natives; though the distinctions of caste have long ceased to be so strictly observed in the Island as they are on the mainland of India. The members of this class for the most part perform such labour as is accounted degrading; among these, curiously enough, is washing. No high-caste Indian will hold familiar intercourse with a Rodiya. As though kind mother Nature wished to compensate for the injustice thus done to some of her children, she has not only endowed the poor rejected Rodiya with the precious gifts of contentment and frugality, but bestowed on him the attractive grace of beauty of form and limb, and as he wears the smallest possible amount of raiment there is ample opportunity for seeing and admiring it. Both the young men and maidens of this race are generally tall and well grown, and have handsomer faces than the rest of the Cinghalese. Maybe it is this very fact, which is the occasion of their being envied and hated.

Throughout Ceylon as a rule it is the stronger sex that is the better favoured, and the boys particularly are remarkable for a poetical beauty of expression in their fine Aryan features. This is conspicuous in a finely cut mouth and very dark, inspired-looking eyes, promising much more than the brain within fulfils; their fine oval faces are framed by thick long jet-black hair. As the children of both sexes always go naked till they are eight or nine years old—at least in the villages—or wear the scantiest loin-cloth, they are perfect as accessory figures in the Eden-like scenery, and often it would be easy to fancy that a Greek statue had come to life. Plate IV. of Ransonnet's book, the portrait of Siniapu, a lad of fourteen, gives a good idea of the characteristic type. Gamameda exactly resembled this head, but that his features were even softer and more girlish, reminding me of Mignon.

In advanced life this mild and pathetic charm is entirely lost, particularly in the women, and a certain hard or stolid absence of expression takes its place; the cheek-bones often become disagreeably prominent. A strikingly hideous specimen was constantly before me in the person of old Babua, the third individual who made his bow to me in the rest-house at Belligam, being, in fact, the cook. This lean old man, with his withered limbs, by no means answered to the picture we usually fancy of a comfortable-looking cook; much more did he remind me of the quadrumanous progenitors of the human race, and when his huge mouth widened across his parched bronze face to a grotesque smile, his resemblance to an old baboon was complete. It was a whimsical accident that his name should also identify him with his prototype, since even the scientific name of one of the species is *Cynocephalus babuin*. However, this venerable ape, with his projecting muzzle and low forehead—derived probably from some infusion of negro blood—was a most harmless and good-natured soul. His whole ambition was fulfilled when he succeeded in devising some new variety of the curry which was set before me twice every day with my rice, and when I pronounced it good. A little more cleanliness in his primitive kitchen might have been desired, as well as in Socrates himself.

Besides these three, the permanent staff of the resthouse, I had a fourth useful retainer in my interpreter William. I had engaged him, for a month at any rate, in Galle. My English friends had advised me to hire my servants there for my stay at Belligam, according to the custom of the country—one as interpreter, one to hunt for me, one to wait upon me, etc. But I had already seen too much of the trouble and

annoyance of the numerous servants kept in India to discover any merit in this excessive division of labour, and I was glad to find in William a servant who expressed himself willing to fulfil the combined functions of interpreter, valet, and assistant. He had for several years served as a soldier, and officer's servant, had very good certificates of character, and was on the whole a fairly handy and willing assistant. Being a true born Cinghalese, he had, of course, a pronounced aversion to work in general, and to hard work in particular, and he regarded it as only becoming to expend as much time and as little labour as possible on everything he did. The most important task of the day to him, as to every Cinghalese youth, was the artistic treatment of his head. To wash and comb his long black hair, to dry it carefully and anoint it with cocoa-nut oil, to twist it into a smooth even knot and fasten it up with a large tortoise-shell comb—this was to William a serious performance, a drama in six acts, to which he devoted some hours every morning. Then, to refresh himself after such an effort, some hours of rest were indispensable. He fulfilled his duties as interpreter and as keeper of my clothes and linen with conscientious exactitude, but indignantly scouted every suggestion that he should do any harder mechanical labour, saying, with much dignity, that he was not a coolie. However, he did his light housework with a fair degree of dexterity, and was always ready to help when I worked with the microscope.

My readers of the gentler sex will, no doubt, be curious to know something of the female inhabitants of the rest-house at Belligam. I can only regret that I have nothing to tell, for the simple reason that there were none. Not only were Babua, the cook, and William, the house-maid, of the masculine gender, but even the laundress who carried away my linen once a week and pounded it clean with stones in the river; and so, in fact, are almost all the domestics throughout India. Indeed, in all Belligam there were hardly any of the softer sex to be seen; but of this I shall speak later.

CHAPTER XI

A ZOOLOGICAL LABORATORY IN CEYLON

My first work in Belligam was to set up my household goods in the rest-house as comfortably as might be with the help of my four familiars, and then to arrange a laboratory. The bungalow contained but three rooms, of which the middle one—the dining-room—was the sitting and eating-room for all the visitors to the house, chiefly government officials travelling through. A large dining table, two benches, and several chairs, were all the furniture. On each side of this room was a large sleeping room with a huge Indian bedstead, in which a sleeper disturbed by dreams could turn comfortably on his axis without touching the edges with the tips of his toes. An ample mosquito curtain, which was stretched over it, had formerly perhaps done good service, but was now present only as an idea. I also found the mattress in a state which led me to regard it as advisable to abstain from using it, and to sleep in the native fashion on a palm-leaf mat. Besides this mighty bedstead, there was in each of these rooms a small table with washing apparatus and a few chairs. The large windows in the white walls were, as elsewhere, devoid of glass panes, but they could be closed by green wooden venetian shutters; the floor was paved with flags. The lighter of the two rooms, facing south, which I chose for my own use, commanded a beautiful view of the harbour through a door opening on to the verandah. I would gladly have used this room exclusively for working in, and have arranged it as my laboratory, taking the other, northern room, for a bedroom and

Water Colour of Colombo 1881

by Ernst Haeckel

From the Collection in the Ernst Haeckel House of the University of Jena

private sitting-room; but my host was obliged to keep this in case of need, for the use of travellers passing through.

In view of the primitive simplicity of the furniture, my first care was to procure some household chattels, without which all work in these huge empty rooms was quite out of the question; above all a large table and a bench, and then, if possible, some sort of cabinet or cupboard. In this I had the greatest difficulty, and although my new friends did all they could to help me, my laboratory when complete left much to be desired. The chief headman supplied me with boards, which I laid across my empty cases, to make benches on which to deposit my glass phials, and the second headman lent me two large old tables. The collector, who was a most obliging and intelligent man, lent me a few small cabinets or *almeiras* that I could lock, in which to bestow my valuable instruments, chemicals, and poisons. The schoolmaster provided me with a small book-case, and the kind folks contributed many other small articles of furniture, with which I contrived to fit up my laboratory fairly well. In payment for all these little kindnesses they were content to take the mere satisfying of their curiosity; but this ere long grew to such dimensions as to become a serious nuisance, robbing me of a great part of my precious working hours.

Beyond these most elementary requisites, which most of the Cinghalese would regard as superfluous luxuries, next to nothing was to be had in Belligam which could serve me in any way, and it was really most fortunate that I had brought with me from Europe all that was essential, both for my personal convenience and for my zoological studies. There were, it is true, a carpenter and a locksmith—so called—in the village, whose assistance I might often have found extremely useful, but the primitive products of their handiwork sufficiently proved the extent of their skill, as well as their astonished admiration of the simple chattels I had with me. I soon discovered that I must do everything myself, for whenever I did by chance employ a Cinghalese workman, as a rule the first thing to be done when the thing was finished was to remake it myself from the beginning. As to repairs to instruments and so forth, which unfortunately were largely needed, any assistance from such bunglers was of course not to be thought of.

In spite of every hindrance, however, I succeeded in a few days in transforming my room into a tolerably good laboratory, answering in some degree to the requirements of the study of marine zoology. I had

set up my microscopes and dissecting instruments, arranged a dozen of large glass vessels and a few hundred phials on shelves, decanted the spirit I had brought with me into bottles, mixing it with turpentine and oil of thyme, to protect it against the possible thirstiness of my servants.

One of the two cupboards held my well-furnished medicine chest, as well as my cartridges and powder-flasks, my photographic apparatus and chemicals—in themselves a perfect witches' kitchen—and the poisons for preparing and preserving beasts. In the other I placed my books and papers, drawing materials for working in water and oil colour, and a number of fragile or delicate instruments. The feet of these two cabinets and those of the tables all stood in saucers full of water, like clay flower-pot saucers, to protect them against the destructive attacks of termites and other ants. In one corner of the room I stowed my fishing-nets and rods; in another, my gun and apparatus for hunting, trapping, and botanizing; a third held a soldering-pot and tin cases; and in the fourth stood the above-mentioned bedstead, which by day served as a table for making preparations on. Round the walls were arranged a few dozen empty cases to receive my specimens, and the tin boxes in which I kept my clothes. Above these I drove in nails to hang up a barometer, thermometer, scales, and fifty things I needed for daily use.

Thus, in a few days, the rest-house at Belligam looked just like those marine laboratories which, twenty-two years since, I had arranged for a six months' winter residence at Messina, and again, fifteen years ago, at Lancerote, in the Canary Isles, with this difference, that my outfit in both the Science and Art Departments was far more complete and various than on those previous occasions. On the other hand, my domestic arrangements here were far simpler and more primitive. However, I consoled myself for many deficiencies by reflecting that I was at scarcely more than six degrees north of the equator, and that no laboratory for the study of marine zoology at all to be compared with mine had ever yet been seen in Ceylon. And I set to work with proportionate eagerness and zeal.

The extreme difficult attendant on such work in the tropics, more particularly in the delicate operation of examining the structure and development of the lower marine animals, have been severely felt and loudly lamented by every naturalist who has attempted it. I was, therefore, fully prepared for them, but I soon learnt by experience that they were more and greater in Ceylon than I had expected. It was not only

the destructive effects of an excessively hot and damp climate—the mere fact of living in a primitive village among a half-savage population, as well as the absence of many of the most ordinary resources of civilized life, hindred study and collecting in a thousand different ways. I often thought with a sigh of the conveniences and advantages I had always enjoyed in my scientific visits to the Mediterranean, and which I desperately missed now.

One of my greatest difficulties from the first was to obtain a boat suitable for my fishing operations, with manageable fishermen and boatmen. At Belligam, as everywhere else on the coast of Ceylon, with the single exception of Colombo, the only boats in use are the quaint canoes with outriggers, which I have already described. As I then said, these are from twenty to twenty-five feet long, and scarcely more than eighteen inches wide, so narrow that a grown-up man cannot sit in them with his legs side by side. Thus the sitter is fast stuck into his boat, and my friend, Professor Vogel, of Berlin, who had formerly used such a canoe in this part of the world, has, in his delightful account of his journey, very aptly named them "calf-crushers." To work in such a canoe—a mere hollowed-out trunk of a tree—or even to go from place to place in it, with no possibility of the free action needed for dredging or for casting a net, was quite out of the question. Net-fishing must, at any rate, be given up. Another disadvantage in these canoes was offered by the outriggers—the two bars of wood or bamboo which project on one side, and are fastened to a stronger pole parallel with the boat, and at eight or ten feet away from it. This floats on the surface of the sea, and prevents the high narrow canoe from being upset. But while it contributes considerably to its safety, it also adds to its inconvenience; for only one side of the boat can ever be brought up alongside of the shore, or of any object, and turning is a long process. There is no rudder whatever; the boat is steered by means of an oar, which can be used alternately at either end of the canoe, both being alike and ending in a point. The smaller boats of this kind are propelled by two rowers, the larger ones by four or six. They have, too, a small mast with a broad square sail; this is of use in a favourable wind, for the light bark, with its shallow draught and narrow bulk, offers very small resistance to the water, and shoots like an arrow over the smooth sea. I have often made from ten to twelve miles an hour in such a boat, as fast, that is, as a good steamer. If the wind bears too strongly against the sail, threatening to upset the canoe, the boatmen scramble like monkeys over the side and out on to the floating beam, on which they squat to keep the balance true.

It was obviously impossible to embark in such a boat, with a case full of glass vessels, and the various paraphernalia which I was accustomed to make use of for catching floating marine creatures, and particularly Medusae; I therefore had to construct in my canoe a queer contrivance of boards laid across the top and projecting to some distance, on which I could sit more comfortably, and at any rate move freely. At each end of this platform two cases were attached with ropes of cocoa-nut fibre, in which I arranged four large glass vessels and a dozen or so of smaller ones. Ropes of the same fibre or coir are extensively used in constructing these canoes, all the parts being tied together; the natives use no nails in making them, nor any iron whatever—the whole thing is of wood and Cocos coir, even the perpendicular sides, rising three or four feet above the hollowed trunk which forms the body of the canoe, are tied on with cords of palm-fibre. All the rope and string I required in my various occupations were, in the same way, made of coir, the outer husk of the cocoa-nut.

In all these arrangements and the further fitting of my boat, as well as in finding and instructing my boatmen, I was greatly assisted by a man to whom I owe much gratitude for kind and valuable services; this was the second headman of Belligam, the Aretshi Abayavira. I had previously heard of his intelligence and merit from the government agent of the southern district, who had especially recommended me to his care. He was a remarkably clever and bright Cinghalese of about forty years of age, whose general information and range of interests was far greater than those of most of his countrymen. He had none of their stolid and lazy indifference; on the contrary, he displayed an eager interest in every kind of knowledge, and had done his best, so far as lay in his power, to promote it in his immediate circle. He spoke tolerably good English, and expressed himself with a natural intelligence and soundness of judgment that frequently astonished me. And the Aretshi was a philosopher, too—in a higher sense than Socrates of the rest-house. I remember with infinite pleasure several deep discussions we had together on a variety of general subjects. He was free from the superstition and dread of spirits which are universal among his Buddhist fellow-countrymen, and gazed, on the contrary, with open eyes on the marvels of nature, seeking their causes and explanation; thus he had learnt to be an independent freethinker, and was delighted to find me able to account to him for many phenomena, which had hitherto remained mysteries to him. I think I can see him now, a tall brown man with expressive and regular features—how his black eyes would sparkle as I explained to him this

tremendous, and the dazzling sheet of water, unruffled by a breath, looked like a sea of molten metal. I had hardly been fishing one hour, streaming with sweat, when I was utterly exhausted. I felt my strength failing rapidly; a singing in my ears and an increasing and oppressive pain in my head made me fear a sunstroke. I had recourse to a plan which I had often tried before in similar circumstances. My light clothing being already drenched by fishing under such difficulties, I poured a few buckets of sea water over my head and then covered it with a wet handkerchief under my broad-brimmed helmet. This remedy had the happiest results, and I availed myself of it almost daily, as soon as the intense heat began to produce the oppressive sense of fullness in the head, by about ten or eleven o'clock. Under a constant temperature of from 27° to 31° centigrade, the sea being very little below the atmosphere, this cooling douche is a very beneficial and refreshing process, and even sitting for hours in wet clothes, which in our climate would induce a severe cold, and is both harmless and pleasant.

The wealth of varieties of marine creatures to be found in the Bay of Belligam was evident even on this first expedition. The glass vessels into which I turned the floating inhabitants of the ocean out of the gauze net were quite full in a few hours. Elegant *Medusae* and beautiful *Siphonophora* were swimming among thousands of little crabs and *Salpae*, numbers of larvae of Mollusca were rushing about, plying their ciliated fins and mingled with fluttering *Hyaleadae* and other Pteropoda, while swarms of the larvae of worms, crustacea and corals fell a helpless prey to greedy *Sagittae*. Almost all these creatures are colourless, and as perfectly transparent as the sea-water in which they carry on their hard struggle for existence, which, indeed, on the Darwinian principle of selection, has gradually given rise to the transparency of these pelagic creatures. Most of them were well known to me, being of genera, if not of species that I had met with before; for the Mediterranean, and particularly the famous Straits of Messina, under favourable circumstances, when fished with the gauze net, yield the same mixture of pelagic forms and species. Still, I could detect among my old acquaintances a number of new forms, some of them of the greatest interest, which invited me to examine them promptly with the microscope. So after a couple of hours fishing I told my men to row back again and meanwhile studied my newly found treasures as best I might. But I soon discovered to my grief that within a very short time after being captured—at most half an hour, and often not more than a quarter—most of the fragile creatures died; their hyaline bodies grew opaque, and falling to the

or that fact in nature, and then, in his gentle full voice, he would ask me with respectful confidence to answer some question arising out of the subject.

In everything, however, I found the amiable side of the Cinghalese character—a quiet, impressionable nature with a peculiar grace of manner—at its best in the Aretshi; and whenever my mind reverts to that verdurous paradise, peopled with the slender brown figures of the natives, the Aretshi and Ganymede stand forth as the ideal type. The Aretshi's nephew, a youth of seventeen, who was studying in Colombo with a view to becoming a teacher, was also a particularly bright young fellow; he was at this time spending his holidays at Belligam, and in a variety of ways most helpful and useful.

With the Aretshi's assistance I procured four of the best boatmen and fishermen in Belligam to manage my boat and help me in my marine excursions I paid them five rupees a day for each excursion, but when they dived for coral, or we were out at sea for half a day at a time, I always added a few extra rupees. At first I had considerable difficulties with them, and when I fished the surface of the water with a fine sweeping net and showed them for the first time the fragile *Medusae* and *Polyps*, *Siphonophora*, and *Ctenophora*, which it was my first object to capture, I could see plainly in their faces that they thought me a fool. By degrees, however, and by dint of a little patience, they learnt to understand what I wanted and then did their best to add to my collections. Two of these men particularly distinguished themselves in diving down to the coral banks, and to their services I owe a large part of the splendid corals, and the wonderful marine creatures living among them, which I was able to collect and bring home to Europe.

But the climate of Ceylon, that terrible and unconquerable foe of the European, which nullifies so much of his toil, placed far greater obstacles in the way of my fishing and studies than any difficulties as to the boat and men. On my very first excursion on the bay of Belligam I learnt what I had to dread. A number of preparations and arrangements had detained me till nine in the morning before I fairly put off from shore. The tropical sun was blazing down pitilessly from the clear blue cloudless sky, there was not a breath of air, and the mirror-like sea reflected its rays with an intensity which no eye could endure. I had to put on my blue spectacles to enable me only to keep my eyes open. However, I had the canoe pulled out to sea in hopes of finding the temperature there somewhat lower; but the heat seemed even more

bottom of the glass, formed a powdery white mass. And even before we could reach the land I perceived the characteristic odour exhaled by their soft and rapidly decomposing bodies. This decomposition which, in the Mediterranean, under similar conditions, only took place after from five to ten hours, here, with a temperature from ten to twelve degrees higher, had begun in half an hour.

Greatly disappointed by this discovery, I hurried my return as much as possible, and was on shore again by twelve o'clock. But a fresh difficulty now arose. In spite of the scorching heat, almost all the population of Belligam were crowded together on the strand to satisfy their curiosity as to the results of my wonderful new mode of fishing. Every one wanted to see what I had caught, and what I should do with it, or, rather, in what way I proposed to eat it, for of course no one would catch sea-creatures unless to eat them. The astonishment of the bronze assembly through which I made my way, was unbounded when they saw nothing in my glass jars but the white sediment at the bottom and a few minute creatures swimming at the top. My companion, the Aretshi, told me afterwards, that when he explained that I did all this simply with a scientific purpose and to make a collection for study, they neither understood nor believed him; on the contrary, most of them scented some mysterious magic behind all these doings, the brewing of philtres or the like; while the more realistic spirits opined that I was concocting some new variety of curry; the really judicious, however, regarded me simply as an European madman.

In this way I lost a precious quarter of an hour before I could make my way through the inquisitive crowd to the house, close as it was. There I began, as usual, to sort out the hundred tiny beings, and place them in separate glasses with fresh sea-water. But, alas! I saw at once that at least nine-tenths of my booty were already dead and useless, and among them most of the very creatures which had attracted me by their novelty. Even the remaining fraction were so exhausted that most of them soon perished, and in a few hours all were dead and useless.

On the following day I tried every means in my power, and all the most familiar methods, to avert the fatal effects of the tropical heat, but with very small success. In short, it was simply impossible in any way to keep the temperature of the water sufficiently low. I was convinced at last that the indispensable condition of a successful study of marine life in a hot country like Ceylon, is to build or arrange cool rooms and cooled water-tanks. Now that ice, which was formerly imported from

America, is manufactured in Colombo by machines, and both cheaper and more plentiful, the construction of such cold chambers and cooled aquaria will be far less difficult; but considerable outlay would have been requisite then and there, and it was out of my power.

A second important condition of success for such zoological labours would be the construction of the room itself, and above all the introduction of glass windows. These are scarcely ever seen in Ceylon; and in the rest-house at Belligam, as in most buildings in the island, the windows have wooden shutters or venetians, instead of glass. Above these there is generally a wide opening to admit the air, and over the door too, close to the ceiling, there is always a broad gap, and generally no means of closing it. These openings are, of course, a very sensible and pleasant contrivance for constantly airing and cooling the room, but to a naturalist working with the microscope they are far more hindrance than comfort; for every variety of flying and creeping creature has free entrance, and the swarms of flies and gnats, of ants and termites are positively intolerable. The draught blows his papers about, covers his instruments with dust, and often rises to a gale and tosses everything into confusion. The shutters are equally disadvantageous for getting a good light, and this is the very first requisite for working with the microscope, especially with the higher powers. It was often quite impossible under the existing conditions of sun and wind to find any suitable spot for my work-table—the room was too dark, the verandah outside too draughty; out there, too, the projecting roof was a serious drawback.

These and other hindrances to work in Belligam, arising from local circumstances, were aggravated by having to deal with natives, and especially by their inordinate curiosity. The worthy Belligamese had, of course, never seen the like of all the instruments and apparatus I had brought with me, and they wanted to know the use of everything; my way of working, particularly—as, indeed, every thing I did, wherever I might be—was an inexhaustible source of interest to them. Like all primitive races, the Cinghalese are in many respects mere grown-up children, and will perhaps remain so, for under the easy conditions prevailing in this Eden-like island the struggle for existence is a very easy one, and hard labour is unknown. Harmless play and incessant chatter are their principal amusements, so every new thing is an object of interest. It is true, that when I complained to my more distinguished visitors, the *élite* of Belligam, of being annoyed by the inquisitive crowd, the officials

sent away the mob, but they themselves took their place and remained all the longer. The "doctor" took a particular interest in the microscope; the "collector" in my painting materials; the chief magistrate in the anatomical instruments—from the point of view, perhaps, of instruments of torture; the schoolmaster inspected my books; the postmaster my trunks. These and every other article, from the largest to the smallest, were overhauled again and again, felt, and turned over, while a thousand foolish questions were asked as to their construction and purpose.

My growing collection of specimens was a special subject of interest to all, and I thought I should best satisfy them on this subject by giving a regular little lecture on certain days of the week, and explaining some of the objects—a plan I had adopted with great success in places on the Mediterranean. But, in the first place, they did not believe me for the most part, or certainly did not understand; and, in the second, I soon discovered that their childish curiosity had in very few cases resulted in any desire for knowledge. The connection of cause and effect had no interest whatever for these simple children.

It would only be wearisome to relate at length all the other difficulties I had to contend with in the course of my studies in my primitive laboratory. Lacking the help of any European assistant, and thrown entirely upon my own resources, many remained wholly insuperable; and I lost a great deal of precious time in a variety of minor tasks, which are never necessary to zoological studies on the coast of Europe. My strictly limited time for remaining at Belligam was indeed too short for any connected series of observations, especially on processes of evolution, such as I had originally hoped to carry out; so that, finally, my chief consolation was in the very circumstance I had at first most regretted, namely, that the Bay of Belligam was by no means so rich in new and peculiar forms as I had expected to find it. The extended research of the last twenty years, particularly the results of the Challenger expedition, have convinced us more and more that the living creatures of the different oceans are not, by a long way, so dissimilar as the terrestrial fauna of the different continents. My experience in Belligam afforded fresh proof of this. I found there, indeed, a considerable number of new and some very interesting forms, particularly among the lowest orders of marine life: *Radiolaria* and *Infusoria*, sponges and corals, *Medusae* and *Siphonophora*; still, on the whole, the creatures of the ocean-surface, as well as those of the coast-waters, displayed a close affinity to the well-known marine fauna of the tropical Pacific, as, for instance, the Philippine and Fiji groups.

It is quite possible that other shores round India may be richer in various and peculiar forms than Ceylon. One unfavourable condition seemed to me to exist here in the enormous and regular daily rain-fall. While the flora of the island owes its astonishing wealth to this circumstance, the development and thriving of the fauna are in many ways seriously checked by it. The numerous water-courses carry down large quantities of red earth into the sea, which clouds its waters on most parts of the coast; its saltness is reduced, and that pure and transparent condition of the sea-water is destroyed, which is the first and indispensable condition of life for many marine creatures, especially those of the coast.

In spite of all this, my zoological collection in Belligam soon considerably increased; and if I brought home a richer store of materials to work on than I have any hope of exhausting in all the remaining years of my life, I owe it principally to the indefatigable exertions of my faithful Ganymede. My collection excited his most eager interest, and he was never tired of enriching it with land and sea-creatures of all kinds. By his intervention, I found a number of fisher-boys ready to collect for me and dealing for natural curiosities with the Cinghalese children soon became a most amusing business. Sometimes a whole troop of the pretty little naked brown things would make their appearance at the hour I had fixed for such transactions. One would bring a few bright coloured fishes or crabs, another a large star-fish or sea-urchin, a third a scorpion or a millipede, a fourth some brilliant butterfly or beetle, etc. I was often reminded of the entertaining scenes I had witnessed under similar circumstances on the shores of the Mediterranean, particularly at Naples and Messina. But how different here and there was the conduct of the little traders! The Italian fisher-boys used to cry up their goods loudly and energetically, and with their natural vehemence and eloquence would often discourse about them in long and flowery speeches; they always asked ten times their value, and were never content, even with a high price. The little Cinghalese, on the contrary, always approached me with reverence and timidity. They quietly laid their treasures before me and waited in silence to hear what I would give for them; as a rule they were satisfied with a small copper bit, and were only too happy when, in return for some particularly wished-for object, I gave them some trifle from a store of articles I had brought expressly for such barter, and of which I will speak later.

Unfortunately, I had neither time nor means for preserving in a satisfactory state all the interesting specimens of various kinds which

I thus obtained in Belligam. Here, again, the difficulties arising from the tropical heat and the destructive insects were peculiarly annoying. This was particularly the case with those preparations which I attempted to keep in a dry state. Desiccation is, in fact, one of the most difficult problems in the world in so damp and hot a climate; the air is so absolutely saturated with moisture, that even quite dry objects become coated with mould and slowly decompose. There are, too, many kinds of tissue, which it is impossible ever to dry properly there. For instance, the skins of birds and mammals which I had shot, I prepared with the greatest pains and hung in the sun every day for weeks, but they were always thoroughly wetted through again every night.

A worse foe still to the collection of natural history are the legions of destructive insects, above all the swarms of ants and termites. Not a place is safe from their attacks. Even if the large ventilators in every room were not constantly open to secure a current of fresh air, allowing ingress to every creature that creep or flies without let or hindrance, it would still be impossible to exclude these torments. No wall can resist the attacks of their myriad of mandibles; they make their way down through the roof as easily as through the partitions, or up through the floor, which they undermine most cleverly. Not unfrequently, on waking in the morning, one is startled by seeing a small conical hill, which has been thrown up during the night by ants or termites, between the flags of the floor, and of which not a trace was visible the night before. The vigour and rapidity with which these minute enemies carry out the work of destruction, often in a very few days, I was destined to learn by their experiments on my desiccated specimens, within a month of my arrival. In the course of these four weeks I had formed a very pretty collection of butterflies and beetles, skins of birds and beasts, interesting fruits, woods, ferns, and other dried plants, and had locked them up in seeming security in an outhouse belonging to the rest-house. I looked at them almost daily, to see that no spiteful foe had intruded to damage them, and at once put to rout the reconnoitring parties of ants and vanguard of termites which now and then made their appearance. By a lavish use of camphor, napthaline and carbolic acid, I believed I had completely secured my treasures. A few longer expeditions, however, which I made at the end of the fourth week, and pressing work of other kinds, prevented my looking over them as usual for two or three days. How startled I was when, only three days after, I went into my museum and found the larger part of my collected treasures reduced to a heap of dust and mildew! Several regiments of large red ants, entering from the roof,

had effected a combined attack with a division of smaller black ants arriving through the walls, and reinforced by a legion of termites from the ground—the results were disastrous !

From this moment I almost entirely abandoned the idea of preserving desiccated specimens, and tried preserving natural objects in alcohol and in Wickersheim's solution. This, which has lately been so much cried up, I found on the whole very useless. But I found the greatest difficulty even with spirits of wine, for the store I had brought with me was soon exhausted. The arrack or spirit prepared by the natives is of very inferior quality, and the better spirit of wine, which can be bought in the town, is so dear, in consequence of the enormous duty, that I could only use it in small quantities. Besides this, my pleasure in collecting specimens preserved in alcohol was greatly diminished by the odious labour of soldering down the tin cases, which I was forced to do myself. Simple as this process is in theory, in practice it is most difficult, as I discovered in Belligam. Under a constant temperature of from 27 degrees to 30 degrees C., to stand for hours, with a face streaming with sweat, over a glowing soldering-brasier is as near as may be to the torments of hell, and all the more so, since it requires no small effort of strength to solder a large tin case securely. I remember that terribly hard work with horror to this day. Many a time have I wished the whole collection at the devil! Afterwards, to be sure, I doubly appreciated my dearly bought treasures. The thirty cases of specimens which I collected in Belligam, and to which I added twenty more at Galle, richly repaid me for all my trouble.

Even though certain special hopes on which I had built in setting up my laboratory in Belligam were never fulfilled, I gained in my general views of tropical nature; and the six weeks I passed there alone among the Cinghalese filled my mind with a rich store of interesting experience.

CHAPTER XII

SIX WEEKS AMONG THE CINGHALESE

When I had fairly conquered the initial difficulties my daily life in Belligam settled itself very satisfactorily, and on the whole I found fewer deficiencies than I had at first feared. My four familiars fulfilled their duties very fairly well; and when, now and again, something indispensable was lacking, the faithful Ganymede was ready at once to supply it. In view of the vast variety of tasks which I found to do, arising on one hand from collecting specimens and working in my laboratory, and on the other from my anxiety to make as many sketches as possible of the lovely neighbourhood of the village, my first object, of course, was to make the best possible use of my precious time in this place. Every morning, as I got up, I used to tell myself that, simply as balanced against the cost of my journey and preparations, my day was worth five pounds sterling, and that I must before nightfall have got through work that I could value at least at that sum. I made it an immutable law that not an hour was to be wasted, and, above all, that I must forego the midday siesta which is universally indulged in; in point of fact, that was my quietest and most profitable hour for study.

Belligam being at not quite six degrees north of the equator, and the difference between the longest and the shortest days of the year amounting to not so much as one hour, I had nearly twelve hours a day in which I could work. I got up every morning before the sun, at five o'clock, and had taken my first cool morning bath before he rose above the palm-groves of Cape Mirissa, exactly facing the rest-house. In the

verandah, from whence I usually watched the sudden birth of the day, Ganymede would be standing ready with a freshly opened cocoa-nut, the cool juice being my regular morning draught. Meanwhile, William shook out my clothes to dislodge any millipede, scorpion, or other vermin that might have crept into them. Soon after Socrates made his appearance, bringing me my tea, with an air of extreme humility, and a bunch of bananas, and the maize-cake which is eaten by way of bread. My dear old habit of coffee-drinking I had to give up altogether in Ceylon, though coffee is my favourite drink, for though the coffee districts are the chief source of wealth in the island, the noble infusion is generally so bad that tea is universally preferred. It probably arises from the fact that the coffee-beans are not properly dried in the island, and never reach that pitch of desiccation which is indispensable to careful and successful preparation till they have travelled to Europe.

At seven o'clock my boatmen commonly came up to fetch the nets and glass vessels for the day's water-excursion. This lasted from two to three hours at most. On my return I at once distributed my prizes into a number of glass jars of various sizes, picked out from among the few survivors such as it was still possible to save, and immediately set to work to draw and dissect all the newest and most interesting. Then I took a second bath, and at about eleven ate my breakfast. The principal feature of this was invariably the national dish of curry and rice. The rice itself was always the same, plainly boiled; but the concoction of the curry, the all-important spiced stew which gives savour to the rice, absorbed the whole of the wit and care of which stepmother Nature had bestowed but a niggardly share on Babua's small brain, and his pride was to surprise me every day by some novelty in the mixture. One day it was *sweet curry*, less spiced and sometimes really quite sweet; the next it was *hot curry*, strongly flavoured with red peppers and other pungent spices. Another time it was a compound defying analysis, a *mixtum compositum*, consisting mainly of vegetables of all sorts, cocoa-nut, and various fruits; or, on the other hand, chiefly meat of one kind or another. These last compounds excited my greatest admiration, for Babua seemed to fancy that I, as a zoologist, must take an equal interest in every class of animal life, and that therefore their application to the end and purpose of curry must be an important natural problem. So, if on Monday the Vertebrata were represented by some delicate fish in my curry, on Tuesday this was replaced by noble prawns and shrimps, or by small crabs as representing the Crustaceae. On Wednesday, cuttle-fish (*Sepia* or *Loligo*) would appear, the most highly organized of the Mollusca;

while on Thursday we condescended to some edible Univalve or to baked oysters. On Friday, the worthy race of Radiata were represented by starfish or Echinodermata, the eggs of the sea-urchin, or the gelatinous texture of a Holothuria (*Trepang*). On Saturday, I fully expected to have come down to the Zoophytes, and to find Medusae or corals, sponges or Actiniae, in my bowl of curry. My cook, however, clinging to an antiquated system, evidently regarded Zoophytes as plants, and supplied their place with some winged creature—bats or birds, or sometimes the fleshy bodies of a horned beetle or moth. On Sundays, of course, he laid himself out to give me some special treat, and my curry was of the best, containing a fowl or a fat iguana, occasionally even a snake, which I at first mistook for eel. Babua was evidently convinced of the close affinities of birds with reptiles, and thought it made no difference whether he sent the earlier or the more recent type of Sauropsis to table. Happily for my European prejudices, I was gradually initiated into the mongrel mysteries of curry, and commonly knew nothing of its constituents till after I had swallowed it in blind resignation. Besides, the thick sauce in which they were disguised contained such a mixture of spices, with particles of roots, fruits, and leaves, that nothing short of anatomical analysis would have revealed the nature of the first elements, and this I carefully avoided.

For the first week or two I had some doubts as to whether I could hold out for some months on the national diet of curry and rice. I went through the same experience as Goethe did with the muddy Merseburg beer at Leipsic; at first I could hardly eat it, and at last I could hardly bear to part from it. In the course of the second week I found myself making a virtue of necessity, and fancied that there was something really remarkable, or at any rate interesting, in the flavour of curry; and by the end of a month habit had made me so much of an Indian that I began to wish for fresh varieties of the stew, and devoted the produce of my own sport to the purpose; and now I had curries made of monkey and of flying-fox, to the amazement of Babua himself.

I found under all culinary difficulties the greatest comfort in the marvellous fruit which graced the rest-house table, fresh every day, and amply indemnified me for all the anguish of curry. Foremost of all I must sing the praises of the noble banana (*Musa sapientum*) or Pisaug, the most precious gift of the tropics, and worthy of its name of "Fig of Paradise." Though throughout the tropical zone this incomparable fruit is one of the most profitable of cultivated plants, this is especially the

case in Ceylon. Here we are in the paradise of lemurs; the droll little loris (*Stenops gracilis*), half monkeys, which I kept alive as pets in the rest-house, left me no doubts on this point, for they prefer the sweet fruit of the Pisang to any other food. Many varieties of the tree are cultivated by the Cinghalese. A small gold-coloured kind—"Ladies' fingers"—are thought the best; they are, in fact, not much larger than a slender finger, and are particularly sugary in flavour. The huge water-bananas are, in size, form, and colour, more like a large cucumber, and their cool juicy flesh is particularly refreshing. The floury potatoe-bananas, on the contrary, are valued for their solid mealy consistency and nutritious qualities; three or four are enough to mitigate the pangs of hunger. The pine-apple banana is characterized by a delicate aroma, the cinnamon-banana by a spicy flavour, and so forth. This fine fruit is commonly eaten raw, but it is also excellent boiled or baked, or stuffed and fried. No other fruit that grows, perhaps, is at once so delicious and so nourishing, wholesome and prolific. A single banana tree bears a clump of fruits consisting of several hundred, and yet this beautiful plant, with its grand crown of drooping light-green leaves, each ten feet long, is an annual. The beauty of the banana, as a feature in the landscape, is on a par with its inestimable utility; it is the ornament of every Indian hut. If I could transplant only one tropical plant into my European garden, the lovely *Musa sapientum* should have the preference above all others. In practical value, this Musa of the wise is the philosopher's stone of the vegetable world.

Next to the banana, of which I ate several three times a day during the whole of my stay in Belligam, the chief ornament of my table were fine pine apples—a few coppers' worth; then the handsome mangoes (*Mangifera Indica*), an oval fruit from three to six inches long; their bright gold-coloured flesh, of a creamy consistency, has a subtle aroma, which, however, distinctly recalls that of turpentine. I also found the fruit of the passion flower (*Passiflora*) very pleasant eating, with a taste something like the gooseberry. I was less attracted by the more famous custard apple, the scaly fruit of the *Anona squamosa*, or by the Indian almond, the hard nut of *Terminalia catappa*. The quality of the apples and oranges in Ceylon is singularly bad; the oranges remain green, stringy and dry. But no doubt the inferiority of these and other fruits is due to want of care; the Cinghalese are much too well off and easy going to devote much pains to the selection and culture of the trees.

When I had refreshed myself with fruit after my modest breakfast, I generally devoted the hottest hours of the day, from twelve to four

o'clock, to dissecting and microscopic work, observations and drawing, or to preparing and packing specimens. The evening hours, from four to six, I commonly spent in making some excursion in the lovely neighbourhood, sometimes making a water-colour sketch, and sometimes trying to perpetuate it in photography. Sometimes I shot monkeys or birds in the woods, collected insects and snails, or went down to the shore to gaze at the coral reefs, and increase my fast-growing collections with some of the endless treasures of the sea. Loaded with prizes, I got home again by half an hour or an hour after sunset; and the sorting and arranging, or skinning and cleaning, with pressing plants, etc., occupies about an hour more.

Thus it was generally eight o'clock before I sat down to my second solid meal or dinner. At this, again, the principal dish was always curry and rice, but besides there was usually some fish or a crab, which I always found excellent, and after it a dish of eggs or a pudding, and a desert of delicious fruit.

There was, of course, no lack of fish in Belligam. The most esteemed—and justly so—is the excellent Seir-fish (*Cybium guttatum*), a large, flattish, thorny-finned fish of the mackerel family (*Scomberidae*). There are also some very excellent members of the families of the *Cataphracti*, *Squamipinnes*, and *Labroidei*. The hideously grotesque bays and sharks, of which enormous specimens may be seen every day in the fish-market, are less meritorious. When Babua tried to persuade me to relish these with a keenly pungent peppered sauce, he reckoned perhaps on the philogenetic interest attaching to these primaeval forms—the survivors of the common progenitors of the higher Vertebrata, including man himself.

The reader will have learnt from the *menu* of my Belligam fare that I was on the high road to become a complete vegetarian. Now and then, to be sure, Socrates tried to give me a special treat in the form of a beefsteak or a mutton chop; but I will forbear to hint what I suspected to be the real animal to which I was indebted for these delicacies. I must, however, confess that I sometimes tried to supply the place of an European meat diet by the use of my gun. Among the dainties I have mentioned above as the results of my sport, I spoke of monkeys. I found this noble game excellent eating, either fresh and baked, or pickled in vinegar; and I began to suspect that cannibalism was, in fact, a refined form of *gourmandise*. The flesh of the *Pteropus* or flying-fox I liked less; it has a peculiar musky flavour. The meat of the iguana (*Monitor dracaena*) a good deal resembles veal, and stewed snake reminded me somewhat of

stewed eel. Out of a variety of birds, wild pigeons and crows, wild ducks and herons were frequent substitutes for fowls. Added to these, I had a variety of *frutti di mare*, the savoury produce of the sea—shell-fish, sea-urchins, Holothuria, etc.—so that the kitchen bag at Belligam included a greater variety than might at first be supposed. In addition, Mr. Scott, my kind host at Galle, had provided me with a quantity of English preserved food, Scotch marmalade, Liebig's extract of meat, etc., and had also taken care to supply me drinkables.

With regard to this important question of what to drink, I had at first grave doubts. The common drinking water is considered extremely bad and unwholesome throughout the low country of Ceylon, though the hill districts are abundantly supplied with the purest and coolest springs. The heavy rainfall which daily occurs constantly carries down soil and vegetable refuse into the rivers, and in many cases they are also fed with the overflow of the stagnant lagoons. As a rule, therefore, the water is not fit to drink till it has been boiled, and in the form of weak tea, or mixed with whisky or claret. My good friend, Mr. Scott, had supplied me with a more than ample quantity of whisky, but still my favourite drink was cocoa-nut milk, which I found as pleasant and refreshing as it was wholesome.

When my simple dinner was over, I made it a rule to take a short evening walk on the deserted shore or in the palm groves, illuminated by thousands of fire-flies and glow-worms; then I made a few notes, or tried to read by the light of a lamp burning cocoa-nut oil; but generally I was so overpowered by fatigue, that by nine o'clock I was glad to go to bed, after carefully shaking my night things, as I had my clothes in the morning, to turn out intruding scorpions or centipedes. Large black scorpions, about six inches long, were so common that I once collected half a dozen in the course of an hour; there are also a great many snakes. The pretty green whip-snakes are seen everywhere hanging from the boughs of trees, and the large rat-snake (*Coryphodon Blumenbachii*) hunts the rats and mice over the roofs of the huts. Although it is quite harmless and devoid of venom, it is always an unpleasant surprise when, in the heat of the chase, one of these creatures—five feet or so in length—suddenly comes down through a hole in the ceiling, and drops, perhaps, on to your bed.

My sleep was not much disturbed, as a rule, by the manifold wild creatures of Belligam, excepting by the howling of the jackals and the uncanny cry of the devil bird, a kind of owl, *Syrnium Indrani*, and a few

other night birds. The bell-like tone of the pretty little tree-frogs, which live in the blossoms of large-flowered plants, was rather soothing than otherwise. But the flight of my own thoughts often kept me awake; reflections on the scenes of the past day, and excited expectations of the morrow. The mingled pictures passed before my mind in slow array, as they had been stamped on my memory during my last excursions and studies, and I sketched fresh projects for the future.

I had frequent opportunities of familiar intercourse with the dusky natives of Belligam, most of whom were of unmixed Cinghalese blood, either in the course of the work I needed done in my laboratory, or of my attempts to sketch and photograph the scenery. From the first I was implored by the native "doctor" to lend him my assistance in some surgical operations, and thus my medical skill was noised abroad in a way which would have done honour to the brilliant, if not too profitable, practice of some of my gifted colleagues at home. Before long I was credited with the skill of a juggler and magician, able to brew elixirs out of herbs, and extract gold from sea-creatures. My black art was appealed to for the most wonderful results; old and young crowded to follow me from village to village, and in all my walks. Everything I did was of absorbing interest, and they suspected a mystery behind my simplest acts.

Dealing with the natives for natural objects was a most amusing and successful business; I owe many fine specimens to their diligence. It was particularly advantageous to me when we agreed to barter. I had brought with me a number of small articles for this purpose, particularly objects made of iron, such as knives, scissors, pincers, hammers, etc., and these were in the greatest demand; still they also liked glass beads, coloured stones, and other ornaments. But the highest value was attributed to coloured prints, of which I had with me some few hundred, and this says much for the artistic feeling of the Cinghalese. These great works, the delight of all German children* were immensely admired at Belligam, and I only regretted having no more of them. They were highly prized even as a return for presents and hospitality; and I had no better way of showing my gratitude for the heaps of cocoa-nuts, bananas, mangoes, and other splendid fruits, which my brown friends, and particularly the two headmen, sent to me daily. Before long I found all the best huts in the village decorated with these products of German art; and even from the neighbouring villages the headmen came to call, offering me fruit and

* "Bilder bogen aus Neu Ruppin, Schon zu haben bei Gustav Kuhn."

flowers in the hope of receiving in return the much-coveted prints. First in estimation stood the military: Prussian Uhlans, Austrian Hussars, French Artillery, English Marines, and so forth. Next to these came theatrical figures: fancy portraits of Oberon and Titania, the Dame Blanche, and the Somnambula; and scenes from the Wagner Nibelungen-Ring. Then came pictures of animals: horses, cattle, and sheep; and last of all *genre*-subjects, land-scapes, etc., the gaudier and the simpler the better.

By these reciprocal gifts and the trade by barter, I soon had established friendly relations with the good people of Belligam; and whenever I took a walk through the village, or went by in an ox-cart, I had always to return the greetings of my brown friends to the right and left, who came out with their arms gravely crossed and bowed respectfully as I passed. In these walks through the village, as well as in the course of other visits that I subsequently paid to various places in Ceylon, nothing struck me so much as the scarcity of women, and particularly of young women and girls between the ages of twelve and twenty; even among the children at play, boys are far more numerous. The girls are taught at a very early age to remain within doors and perform domestic duties, and they are soon past their bloom. They are often married at ten or twelve, and are old women between twenty and thirty. Grandmothers of twenty-five or thirty are very common. A further cause of the disproportion of the sexes is to be found in the constant majority of boys born among the Cinghalese: to every ten boys on an average not more than eight or nine girls. Thus the fair sex is the rarest—rarest of all when it is fair.

There is a direct connection between these facts and the singular institution of polyandry, of which it is, no doubt, to some extent the cause. Although the English Government has for a long time been endeavouring to suppress this practice, it still exists, and apparently to a great extent, particularly in the remoter parts of the island. It is not unusual for two or three brothers to have a wife in common; and there are said to be some ladies who are the happy possessors of from eight to twelve recognized husbands. A number of very curious histories are told arising out of these complicated family relationships, but it is extremely difficult to discriminate between the core of truth in them and the added fiction.

Old Socrates, with whom I once discussed this question of polyandry very fully, startled me by propounding a new theory of inheritance,

which is too remarkable to be omitted here. It has hitherto been lacking in the ninth chapter of my "Natural History of Creation," and its originality must make it interesting to every sincere Darwinist. I must preface it by mentioning that Socrates was the son of a native of the hill-country of Kandy, and, by his own account, belonged to a high caste. Hence it was with silent contempt that he held dealings with the inhabitants of Belligam, among whom he had been living for some years, and with whom he was obviously not on the most friendly terms. From the very first he warned me against their evil ways in general, accusing them of many sins in particular. "But their reprobate nature is not to be wondered at," he suddenly exclaimed, shrugging his shoulders, with an expression of great gravity. "For you see, sir, these low-country people have always had a number of fathers, and as they inherit all the bad qualities of so many fathers, it is only natural that they should grow worse and worse."

As Socrates had warned me on the very first day of my arrival of the atrocious character of his fellow-countrymen, I was in fact somewhat uneasy; though it was, of course, some consolation when he assured me that he himself was the best of men, and that I might trust him implicitly in everything. How great, then, was my surprise when the chief headman paid me a visit immediately after, and quietly told me very much the same thing; and when, next day, half a dozen more of the village officials called upon me and repeated the tune with variations. Each and all implored me to be on my guard with all his fellow villagers, for that they were a bad lot for the most part—liars, thieves, slanderers, and so forth; the speaker himself was the only exception, and on his friendship I might fully rely.

Although these pressing communications cast a dark shadow on my visions of the Eden-like innocence of the Cinghalese, they came out in even a worse light under the disclosures of the village magistrate, or, as he liked to be styled, the "judge." He assured me with a sigh, that he generally had the whole village on his hands, and that he never found the day long enough for all his business. In fact, I found the Court of Justice—like the village school-house, an open shed—almost always occupied with a few dozen, or sometimes about a hundred of the villagers, seeking justice in some form; but I learnt, to my comfort, that most of the trials were of cases of abuse, insult, or cheating, and particularly of petty theft in the gardens. The Cinghalese in general are much given to cheating and cunning, and are, above all, liars of the first proficiency. On the other hand, they are not addicted to deeds of violence; assault

and manslaughter are very rare, and robbing and murder quite exceptional. They seldom display strong passions of any kind; their temperament being, on the whole, decidedly phlegmatic.

The Cinghalese are great lovers of music and dancing, but both, it must be admitted, in forms not much to our taste. Their chief instruments are drums and tom-toms stretched with vellum which they belabour with all their might with wooden sticks; then they have a reed-pipe, and a very primitive instrument with one string. When, in the evening, I heard the sound of these ear-splitting contrivances in the neighbourhood of the rest-house, and followed them up, I generally found a party of six or a dozen naked brown fellows round a fire, under a palm grove; they had painted themselves grotesquely with white, red, and yellow stripes, and were leaping about and cutting the most extraordinary capers. A large circle of meditative spectators squatted on the ground closely packed, and watched the wonderful performances with devout attention. At about Christmas time, which is the period of the Buddhist festivals at the turn of the year, these devil-dances were more frequent and had some special religious significance. The principal dancers were extravagantly decked out with coloured feathers, wore a pair of horns on their heads, and had tied on long tails—always a particular delight of innocent youth! A whole troop of these demons would often go leaping and hallooing through the village with a band of music, even in the day time; and at night the addition of a drinking bout often made these performances a perfect orgy.

The headman of the neighbouring village of Dena Pitya had arranged a particularly grand Buddhist festival for the 19th of December. I was invited as an honoured guest, and escorted thither in solemn procession. A dozen of venerable and shaven Buddhist priests in yellow robes received me under the boughs of an enormous sacred fig-tree and led me, with strange chanting, into the temple, which was elegantly decorated with garlands. Here I was shown the great image of Buddha, covered with fragrant flowers; and the mural paintings, scenes from the history of the god, were explained to me. I was then led to a sort of throne erected opposite to the temple, under a shady group of bananas and the performance began. A band of five tom-tom thumpers and as many flute-players set up a noise which was enough to make the stones cry out. At the same time two dancers came forward, perched on stilts twelve feet high, and went through a series of wonderful evolutions. Meanwhile the headman's daughters, finely grown black-haired girls of from twelve to twenty, with beautifully formed limbs, handed round

toddy or palm-wine in cocoa-nut shells with sweetmeats and fruit as refreshments. The headman then made a long speech, of which unluckily I could hardly understand a word, but I could make out that he dwelt with emphasis on the high honour my visit had done him. The same idea was expressed in pantomime by a party of ten naked, painted devil-dancers who leaped and capered round my throne. When at length, towards sundown, I took my leave and went to mount my bullock-cart, I found it filled with splendid bananas and cocoa-nuts, that the kindly folks had put in as a parting gift to speed me on my way.

Hardly was I released from my functions as honorary president of this truly Cinghalese Buddhist festival when, the very next day, I had to fill the same office at the annual festival of the Wesleyan mission! On the 28th of December, quite unexpectedly, a carriage arrived from Galle with the head of the Wesleyan mission established there. He informed me that to-day, being the last day of the scholastic year, a grand prize-giving was to take place in their school at Belligam, and that I could do no greater service to a good cause than by distributing the prizes to the children. In spite of my utmost resistance, I was obliged at last to consent. I had done honour to the sublime Buddha yesterday, and to-day I must pay a tribute to worthy Mr. Wesley. So at noon I walked down to the open schoolhouse, where about a hundred and fifty children in white dresses were assembled—some natives of Belligam and some from the neighbouring villages. First they sang several songs, which certainly did no particular credit to the musical culture of the dusky schoolmaster; it struck me that the hundred and fifty children—about ninety boys and sixty girls—were singing at least fifty different tunes at once. They tried, however, to make up for the lack of harmony by strength of voice and vigour of tone. The examinations in Biblical history and English grammar, which came next, were, however, eminently satisfactory; the copy and arithmetic books, too, were by no means bad, when it is considered that the contents were written within six degrees of the equator. The Rev. Mr. N—then delivered a solemn address, at the end of which he requested me to present the thirty prizes that had been awarded to the most diligent scholars. I called out their names from a list, and each time a small Cinghalese came up with a radiant face and took his reward from my hand with a deep bow—an English book or a spelling-book with pictures. Finally the whole party were treated to coffee and cakes. My friends in Galle and Colombo, who heard through the papers of my extraordinary proceedings, laughed at me "consumedly."

The most remarkable ceremony, however, at which I was present during my residence at Belligam, was the funeral of a Buddhist priest, on the 13th of January. While ordinary men are here simply interred, either in the garden behind their own house or in a Cocos grove adjoining the village, none but priests are allowed the honour of cremation. On this occasion the deceased was the oldest and most respected priest in the village, and accordingly a high pile of palm trunks was erected near the principal temple, in the midst of the cocoa-nut grove. After the corpse had been borne through the village with solemn chanting, on a high bier decked with flowers, a troup of young Buddhist priests in yellow robes carried it to the top of the pile, which was about thirty feet high. The four corners were formed by four tall cocoa trunks, and from these a white cloth was suspended, as a sort of canopy. After various ceremonies had been performed with solemn chanting and prayers, the pile was fired at about five in the evening, to a loud rattle of tom-toms. The swarthy crowd, who had assembled to the number of several thousands, filling the cocoa-nut grove, watched the burning of the body with the greatest intentness, particularly when the flames caught the overhanging cloth. The hot ascending air blew out this horizontal sheet like a huge sail, and it was dark before it was caught by the licking flames and reduced to tinder. At that moment a thousand voices broke out in a loud shout of triumph that rang through the silent wood—the soul of the high priest had at that instant flown up to heaven. This solemn moment was the signal for beginning a more jovial part of the festivity. Rice-cakes and palm-wine were offered to every one, and a noisy and jolly drinking bout began, which was carried on through a great part of the night round the still smouldering pile.

Irrespective of these great occasions and a few excursions in the neighbourhood, my lonely stay in Belligam had but few interruptions. Now and then an English government official came through the district on a tour of inspection, and would spend a few hours with me at the rest-house, or even dine with me, and then go on his way. A few Cinghalese schoolmasters were less agreeable visitors; these, attracted by the fame of my laboratory, would come from considerable distances, introduce themselves as my colleagues, and want to see and know everything. Now, it is very true that I am myself no more than a schoolmaster, and have the greatest respect, accordingly, for every member of my caste. But that peculiar species, the *Praeceptor Cinghalensis*, which I here became acquainted with, was very little to my taste, and I was heartily glad to be rid of these pertinacious and inquiring, but extremely ignorant,

CHAPTER XIII

BASAMUNA AND MIRISSA

THE immediate neighbourhood of Belligam, as well as the more distant hill-country which surrounds it, affords a quantity of lovely pictures, and displays the idyllic, and at the same time magnificently tropical character of the south-west of Ceylon, in the greatest perfection. The various excursions I made from hence in different directions, generally escorted by William and Ganymede, remain among my pleasantest recollections of travel.

The beautiful bay of Belligam almost exactly resembles that of Galle in situation and shape, but that of Galle is about a third smaller. Each is nearly semi-circular in shape and opening to the south, being protected to the east and west by a sheltering promontory. The radius of the semi-circle is rather more than a nautical mile in the bay of Belligam, and less in the harbour of Galle; the entrance to Belligam is a mile and a half across, to Galle not more than a mile. On the western promontory of the harbour of Galle stands the Fort; the western side of Belligam bay is formed by Basamuna point, a most picturesque hilly ridge, of which the dark stone is varied by curious clumps of screw pine. The eastern promontory is loftier in both places, and by Galle is the site of the watering place, while at Belligam it is covered with the beautiful woods of Mirissa.

The remarkable resemblance of these two fine bays is enhanced by the character of the strand, which is white sand overshadowed for the most part by splendid cocoa-groves; while the red and brown rocks are

individuals. However, at a later date, I came to know some pleasanter and better educated specimens of the genus.

But the most remarkable visit of curiosity which it was my fate to receive during my stay at Belligam, was paid me at Christmas-time. I came home late one evening, very tired, from a long expedition to Boralu, when Socrates came to meet me outside the rest-house, and with a mysterious air informed me, in a whisper, that four strangers, ladies, had been waiting to see me for more than an hour. In point of fact, as I entered the dimly lighted house, I saw four ladies sitting on the bench, dressed in European fashions, it is true, but in very bad taste. But I was much startled when the flickering light of a cocoa-nut-oil lamp fell on four witches' faces, each more wrinkled and hideous than the last. If they had been but three, I could have mistaken them for the three Phorcydes, the witches of the classical Sabbat, and might have made myself agreeable to them after the fashion of Mephistopheles. Happily I was spared the necessity, for the eldest of the four dusky graces—she may have been about fifty—began to explain to me with much politeness and dignity, and in fairly good English, that they were the daughters of the headman of the neighbouring village, and most anxious to learn; that their mother's grandfather had been a Dutchman; that they took an interest in scientific matters, and wished to see my collections, and to be photographed. I could only beg them to return next day; I could not, indeed, promise the photographs, but I might satisfy their scientific thirst by a little lecture in my laboratory.

Water Colour of Colombo 1881

by Ernst Haeckel

From the Collection in the Ernst Haeckel House of the University of Jena

diversified by most grotesque bushes of *Pandanus*. Here and there we have peeps of the mountains of the centre, remotely blue; among these Adam's Peak and the Hay-cock stand up as conspicuous land-marks. The similarity extends even to the wonderful coral reefs of the two basins. The largest and finest in Galle harbour grow round the foot of the fort, and at Belligam round the base of the cliff and of Basamuna. These latter reefs, however, are less extensive than the former, and the harbour is deeper and less rocky than that of Galle. It is, indeed, difficult to make out why the splendid harbour of Belligam has not long since risen to greater importance as a seaport for shipping, and grown from a miserable fishing village to a flourishing commercial town. If I had to found a colony in India it should, undoubtedly, be at Belligam.

Basamuna, the western cape of the bay, was my favourite walk during my residence there. When I had finished my serious work, at about four or five in the afternoon, and safely accommodated the trophies of the morning's exploits in phials of spirit, I would pack up my microscope and some instruments, and give Ganymede my cartridge case and tin for plants. William carried the gun and butterfly-net, and I myself took a paint-box and sketch book. The cliffs of Basamuna are not more than half an hour distant from the rest-house, which is on the southern side of the village, half way along the western shore of the bay. The shortest road was along the strand, past a few isolated fishing-huts, and then by the edge of the cocoa-nut grove. The ever-lapping sea has here deeply undermined the loamy banks, and every year a number of fine palms are overthrown; their bleached remains stand up here and there out of the water, with the clusters of brown roots in the air washed clean by the waves, like heads of dark hair. Swarms of smart little crabs bustle about on the shore—sand crabs (*Ocypoda*) and hermit crabs (*Pagurus*); these last have a soft body, which they usually shield in the shell of some univalve mollusc, but they seem to prefer the large and handsome red-tipped shell of a land-snail, living on the palm-trees (*Helix haemastoma*). At very low tides it is possible to get round the foot of the steep cliff at the end of the promontory, over the bare coral rock, on which very interesting marine creatures are left high and dry—brightly-coloured shells, thorny sea-urchins, and starfish. At high tide the path lies behind the headland, through a palm wood, where huts are scattered on all sides, each with its plot of bread-fruit trees and bananas.

The view which then breaks suddenly on the traveller as he comes out of the cocoa-nut grove, the solitary spectator of the scene, is a delightful surprise—a wild, deeply fissured coast, dark-red cliffs of porphyry,

and the ocean surf foaming and splashing below. The ridge is almost entirely clothed with screw pines of such fantastic forms and grotesque growth as to be like nothing but the wildest dreams of Gustave Dore. Their twining stems are tangled like gigantic snakes, and supported on long, thin, stilt-like roots; above, they branch like candelabra, lifting their boughs to heaven like threatening arms, while at the end of each grows a spiral sheaf of leaves. At the full moon this ghost-like company, with their black and mazy shadows, are in fact a weird sight, and it is not surprising that nothing will induce the superstitious Cinghalese ever to venture among them at night. Indeed, I must confess that I myself, in spite of a double-barrelled gun and revolver, had an uncanny shudder when I climbed up to this witches' grove of screw pines one night between ten and eleven, quite alone; particularly as Ganymede had implored me with pathetic urgency not to venture there. A keen west wind dashed the silvered foam of the thundering waves high up the dark cliffs, and overhead a legion of closely packed clouds rode swiftly across the deep sky. The rapid changes from black shadow to the magical gleam of moonlight produced the most boguey effects on the shivering leaves and writhing roots that the fancy can conceive of.

When the excursionist has made his way through this thicket, and emerges on to the bare headland, he sees to his left the entrance to the bay of Belligam, and to the south the cocoa-nut groves of Mirissa. On the right, the strand rounds away with a bold sweep, densely clothed with Cocos-palms; and beyond the most northerly point lies a lovely island, overgrown with greenery. Nothing is to be seen of the village, which is hidden behind a wooded rise, and no sign of human life disturbs the feeling of absolute solitude which hangs over this beacon-cliff. The eye ranges free and unhindered over the immense blue waste of the Indian ocean, for thirty degrees of latitude lie between this spot and the nearest land to the westward—a land which is the very contrast to this luxuriant isle: the parched and barren sands of the Somali coast of Abyssinia.

But our thoughts fly to the north-west, and farther still away. The fiery sun is fast sinking towards the violet waves, and the magical hour is approaching—

> "The sacred hour when, on some distant shore,
> The sailor longs to see his home once more."

Our thoughts, too, fly homeward, to the fond hearts sitting in the well-known room, round the lamp or the fire, talking perhaps of the distant

traveller, while, outside, hill and valley are shrouded in deep snow. What a contrast to the scene around us! The crimson ball has touched the ocean's rim, and the rock on which we are sitting rises from a sea of flame. How tender and dream-like are the rosy clouds that hover over it; how gorgeous is the golden sand with its fringe of palms! But there is scarcely time to watch the swift play and change of colour; it is over already, and the brief twilight is so soon past, that it is quite dark before we can set out, cautiously feeling our way, back again through the palm groves to the rest-house.

The opposite headland, the eastern cape of the bay, Mirissa, has equal and yet different charms. With a favourable wind, the point can be reached from the rest-house, in a sailing-boat, in less than a quarter of an hour; but it is some hours' walk thither round the bay by the shore, as the little estuary of the Polwatta river must be crossed, which flows into the bay at the north-east. It was a wonderfully cool morning—January 6th—when I crossed the bay to Mirissa for the first time, provided with food for the day, as I intended to make several little excursions from the point. The little fishing village of Mirissa—shell-village—lies just at the foot of a hill of the same name, and derives it from the quantity of shells, both mussels and oysters, which cover the rocky shore. As we reached the strand, the inhabitants were much interested in a great haul of fish resembling sardines; every available canoe had put out to surround the shoal, and young and old were busy catching as many as possible with hand-nets. We sailed round the picturesque cape, where a heavy surf breaks on the brown rocks, and proceeding about a mile further, landed on the eastern side in a small sheltered cove. I climbed, with Ganymede, up the face of the headland (Mirissa Point), and made my way through the beautiful wood, of which the outskirts are of screw pine, and whose stately trees—for the most part *Terminalia* and *Cedrela*—are wreathed with festoons of creepers. Numbers of monkeys and parrots lent life to the scene, but they were very wild, and never came within shot. When we returned to the shore at about noon, I saw a group of natives standing round the boat. The headman, a fine handsome man of about forty, with a particularly gentle and pleasing manner, came up to me with every mark of respect, and offered me a pretty basket, full of mangoes, pine-apples, oranges, and other fruits from his garden, garlanded with fragrant jasmine, and the blossoms of the *Plumiera* and oleander. He begged me, with modest friendliness, to eat my midday meal—which I was about to begin under the shade of some palm trees—in his house; when I gratefully accepted, he sent some of his

people to make some preparation, while I desired William and two of my boatmen to follow him with the basket which contained our cold provisions. I meanwhile refreshed myself by taking a plunge in the sea.

In about an hour my friend the headman returned, and with him a troop of delightful children, all crowned with flowers. He led me by a winding path through the cocoa-nut grove to a part of the village which was divided off, and which I had not till then observed. Then, passing through a pretty garden, where the path had been strewn with flowers, we reached the headman's hut, a superior residence, built entirely of bamboo, and thatched with palm leaves. The entrance was prettily decorated, in a mode in which the Cinghalese excel, with ornaments made of split and plaited palm leaves. Under the projecting thatch, which formed a verandah in front of the house, a large table had been improvised of boards resting on palm stumps, and covered with large pale-green banana eaves. The food I had brought with me was served on this, and with it a large bowl of rice and curry, fresh oysters, bananas and cocoa-nuts, the kind contribution added by our host. The hearty appetite with which I enjoyed them, sharpened by my hot walk and sea-bath, was in no respect interfered with by the fact that the whole of the headman's numerous family stood round me and watched my proceedings; while outside the garden, the brown village community stood assembled, and gazed from afar.

When I had finished this quaintly arranged meal, which I was in the mood to relish as ambrosia and nectar, my kind host begged me to write my name, and that of my native land, on a palm leaf which he fastened up over his door. He then presented all his family to me, no less than sixteen children—nine boys and seven girls—each prettier than the last. Only the elder ones, from twelve years old and upwards, were more or less clothed, while the younger children wore a string tied round their hips, with a small silver coin attached, as a symbolic expression of clothing. On their arms and legs they wore silver bangles. I had under my eyes a complete history of the development of the Cinghalese type of humanity in a perfect series; and it was all the more interesting, because this part of the coast is famous for the purity of its truly Cinghalese race, which, in fact, has suffered but little admixture. The graceful figures, and, in the elder girls, the well-developed form of their bodies and limbs, and remarkably small hands and feet, no doubt constitute several of the two and thirty "points" which, according to the Cinghalese poets, are indispensable to beauty. Above all, they insist on long

black-hair, almond-shaped eyes, swelling hips, a bosom like the young cocoa-nut, etc., etc. The colour of their skin was cinnamon brown, in various shades; in the little children, much lighter. The happy mother of these sixteen children, a stout and kindly matron of about forty, was evidently not a little delighted when I made William interpret to her my great admiration of her family.

In the afternoon, I made the headman and his eldest sons guide me to a small Buddhist shrine, at about a mile away, which was said to be close to a particularly ancient and sacred bo-tree (*Ficus religiosa*). I found it to be, in fact, a wonderful specimen, by the side of which the other old trees of the forest were but striplings. Its enormous trunk divided at the top into two giant arms, while from its shoulders a perfect thicket of long creepers hung down like a broad green cloak. Other twining plants crept over the dense tangle of roots at the foot, and the white cupola of the dagoba, with the little Buddhist shrine, looked quite tiny, like dwarf's huts, by the side of it. The ground all round was overgrown with elegant *Pothos* or pitcher plants, and among them a weird *Amorphophallus* was conspicuous by its long spadix of scarlet fruit and large pinnate leaves.

It was late in the afternoon before I returned to the village. Here we found bananas and cocoa-nut milk ready prepared for our refreshment, outside the headman's house; and the whole population escorted us as we went down to the shore to get into the boat again. I was really sorry to say farewell to my kind hosts, who had shown the best side of the Cinghalese character in so amiable a light, and I greatly regretted not having brought with me any gaudy prints by which to give adequate expression to my gratitude. For lack of these, I gave my kind entertainer a pocket-knife, and one of the large glass vessels I had brought to keep any marine booty in.

Shortly before sunset we again rounded Mirissa Point, and, as we turned into the Bay of Belligam, a scene met my eyes that I can never forget. On the eastern shore of the gulf, just above Mirissa, rises a natural bastion of fine perpendicular red rocks of giant height, which, even by daylight, are as brilliant in hue as newly burnt bricks. Indeed, they have given a name to the bay, which is marked "Red-bay" in some maps. Now, in the rays of the setting sun, they seemed to burn like live coal, and the shadows they cast looked a pure cobalt. I understood now why the natives of Mirissa called these cliffs "Rasu-pana," or the red lamps. The eastern sky above these stones of fire was pale-green, and a mass of

fleecy cumulus floated in tender rose and orange hues. Below were the warm olive tones of the palm and pandanus groves, and the deep blue green and violet of the glassy sea—a tropical glow of gorgeous and harmonious colouring, such as I never had seen before, and shall never see again.

A water-colour sketch which I made there and then, sitting in the boat, only serves as a suggestion to memory. And yet what would the critics of a Berlin picture exhibition say even to that? Those wise-heads who condemn every effective landscape as soon as its scale of proportions and colouring cease to fall within our miserable North German standard! Did they not, with one voice, reprobate a splendid work by Ernst Korner, in which that too daring painter had represented a sunset at Alexandria with equal brilliancy and truth? And this bore the same relation to the glories of that sunset at Mirissa as the thrifty vegetation of Egypt bears to the lavish abundance of Ceylon.

But the magic splendours of Nature must be seen to be believed in.

CHAPTER XIV

KOGALLA AND BORALU

Of the longer expeditions I made in the less immediate neighbourhood of Belligam, those to Kogalla and Boralu dwell in my memory as among the pleasantest, and are well worthy to be recorded here. Kogalla Veva, the Rocky Lake, is remarkable, for its size and beauty, among the numerous lagoons which lie along the south-west coast of Ceylon, between Colombo and Matura, and which frequently open a communication between the small rivers which here flow into the sea. This lake lies half-way between Galle, and Belligam, and is of considerable extent, sending out arms in many directions. The shores are densely wooded hills, where the crowns of numberless Cocos-palms sway in the breeze. Many small islands, some of them bare rocks and some overgrown with palms or bushes, give a peculiar charm to the scenery, and so do the idyllic homes of the Cinghalese, which peep out among the trees in great numbers, each standing by itself. The vegetation is inconceivably fresh and luxuriant on every side.

It was on a glorious Sunday morning, December 18th, that I started from Belligam before sunrise in order to reach Kogalla early in the day. My kind host at Galle, Mr. Scott, whom I was to meet there, had some days previously sent over his light carriage with a brisk pony and a servant to fetch me. We drove along the Galle road at a round pace, through the pretty hamlets, where the natives were just out of bed and taking their morning bath as usual by the road side. As soon as the sunbeams pierced the palm wood, with its diamond drops of dew, all

was astir, and I enjoyed once more the delicious, newly awakened life of a tropical dawn which had already enchanted me so often. As I reached our trysting place an hour sooner than had been agreed on, I had ample time to wander through the beautiful wilderness.

Presently, with Mr. Scott, there came a fellow-countryman of my own, Herr Reimers, of Hamburg—a merchant now settled at Singapore. He was returning from a holiday tour to Bombay and Ceylon, and it was by a happy accident that he was able to give us the pleasure of his society, as he was to sail the next day. We three took a short walk through the palm groves, and then stayed our steps in front of a hut on the shore of the lake. Here a double-canoe was waiting for us, which the Cinghalese crew had decorated in our honour with garlands of flowers and arches of plaited cocoa-nut leaves. These double-canoes, which are very common both on the land-locked waters and the larger rivers, are formed of two parallel tree-trunks hollowed out, each about sixteen to twenty feet long, and braced together about four to six feet apart by transverse beams, over which planks are laid. Slender trunks of areca palm stand up on each side—half a dozen or so—and these support an awning of pandang matting. Between the palm-trunks, an elegant screen is made of the spreading fan-leaves of the *Borassus*. The benches which are placed on each side of this floating bower thus afford a shady seat, from whence a view is obtainable on every side. Six or eight strong rowers find a place either fore or aft in the hollow of the trunks, which are there left uncovered.

The narrow inlet, out of which we made our way into the lake itself, looks as though the mouth of it were completely blocked by three huge bare rocks. These masses of granite—known as the three brothers (Tunamalaja)—are the favourite resort of numbers of huge crocodiles, that lie sunning themselves with wide-open jaws. No swimmer could pass these hideous gate-keepers with impunity. The lake is surrounded on every side by thick groves and enclosed by pretty hills covered with palms. The little islands, each itself a huge bouquet of palms, are wonderfully pretty, the feathery leaves spreading to catch the utmost possible amount of sunshine. The slender white stems bend in every direction, so that the outer ones lie almost horizontally over the water, while those in the middle stand straight up towards the blue sky. A perfect specimen of these cocoa-plumed islets is the spot of land known as Gan Duwa, which lies directly in front of Belligam, and forms the greatest ornament of the landscape.

We landed on one of these little islands to pay a visit to the fortunate natives who had pitched their solitary hut in the midst of the clump of palms. Three small bare children, who were playing contentedly with shells among the rocks on the strand, fled to their mother with loud outcries of alarm at our approach. She—a pretty young woman, with a fourth child in her arms—seemed equally terrified at such an unexpected visit, and hurried off with her little ones to the protection of her bamboo hut. Her husband came out from behind it—he was digging sweet potatoes in the garden—a fine young Cinghalese, naked all but a narrow loin-cloth. He greeted us with natural politeness, and asked whether he might not offer us a few curumbas (young cocoa-nuts) by way of refreshment. When we thanked him and gladly accepted his offer, he at once climbed one of the tallest trunks and flung us down half a dozen of the golden-brown fruits of the fine variety known as the King cocoa-nut. The cool lemonade-like liquid was wonderfully refreshing in the scorching heat. He then presented us with a bunch of five sweet bananas on a large *Caladium* leaf, and led us into his little garden, in which a choice variety of tropical produce was growing. In answer to our inquiry as to whether he found this sufficient to maintain his family year in year out, the said that he also caught fish and crabs in the lake, and that by selling these and his superfluous produce he earned a very sufficient sum, with which he bought rice and household chattels for his family—more than this he needed not! Enviable man. Life on that cocoa-nut isle is verily living in paradise, and there is no malicious foe to disturb you in your tranquil ease.

We then rowed out on the lake to a rocky promontory, where the white cupola of a dagoba and temple stood up among the thick verdure. A flight of stone steps led us up through the wood to the temple, where pious hands had decked the altar with jasmine and other fragrant blossoms. The coarse paintings on the walls and the statue of Buddha in his yellow robes were the same as in every Buddhist sanctuary. The priests' houses behind the temple were romantically situated under a huge bo-tree, with a lovely view over the lake, and the cliff, which had an abrupt perpendicular fall, made a natural terrace. A few large kittool-palms (*Caryota*) and a fine group of areca and talipot-palms beautified the picture, and a dense drapery of creepers of every description hanging from the crown of a fine cashew tree (*Anacardium*) made it perfect.

It was by this time intensely hot, as we rowed back at midday to the hut of the headman of Kogalla, and the motionless water reflected

the meridian sun like a polished sheet of metal. We were all the more agreeably surprised by the coolness that prevailed in the twilight gloom of the hut in its shady retreat, and a really splendid dinner, which had meanwhile been made ready by Mr. Scott's kind orders, was enjoyed to the utmost. After dinner, while my friends took a siesta, I made an excursion alone to the other side of the lake. I there visited another and a larger temple, and gathered a few of the magnificent terrestrial orchids and *Maranta* flowers which grew on the shore. On this side of the lake, too, I found some charming subjects for my sketch book; but, alas! I paid for them with my blood, for the dreadful land leeches swarmed in the grass on the banks.

Not less beautiful, though on a smaller scale than this Rocky Lake, was another, which I visited several times from Belligam—the Pebble-Lake, Boralu Veva. I owe the delightful days I spent there to the second headman of Belligam, my good friend the Aretshi, who owned a considerable tract of arable land not far from the lake, which he planted partly with fruits of various kinds and partly with lemon grass (*Andropogon*), employing thirty or forty labourers. The road led eastwards from Belligam, and some way into the hill-country, which stretches for many miles to the foot of the mountains.

The first natural wonder met on the way is an enormous cocoa-nut palm, at about a mile from Belligam, with its trunk divided into three branches, each with its crown—a very unusual freak of nature; the second marvel is about a mile further on, by the Polwatta river. On the hither side of a bridge across this stream, and close to a Buddhist temple, stands a magnificent old banyan tree (*Ficus indica*), fantastically wreathed with festoons of creepers, while on the further side, near to the little village of Dena Pitya—the Cattle-field—is another and even larger individual of the same species, the largest in the world perhaps of these extraordinary trees. Its enormous bowery roof, under which a whole village of more than a hundred huts might find room and shelter, is supported on numbers of stout props, each of which might by itself excite astonishment as a huge tree. All these gigantic and pillar-like trunks are nothing but aerial roots thrown out from the horizontal branches of the true central parent trunk. Among these, numbers of smaller aerial roots hang midway, not having yet reached the soil, and clearly accounting for the process by which this many-stemmed giant was produced. Deep twilight always prevails under the shade of the spreading foliage, through which not a ray of light can pierce, and the awe and dread with which the Buddhist villagers regard this sacred tree is very intelligible.

A natural marvel of a different kind is to be seen at Dena Pitya, in the person of a woman of about fifty, who has no upper leg bone (*femur*) whatever. The body about the hip joints is well proportioned and well developed, but supported entirely on the lower half of the legs, which are joined on at the thigh joint. The peculiarity is all the more singular because the woman is the mother of three well-formed children, excepting, that, like their mother, they have but four toes on each foot. Unfortunately any close investigation of the structure was not allowed.

By following the road eastwards from Dena Pitya for a few miles, we reach the famous gem mines, which are said to have been very profitable no longer ago than in the last century; they now seem to be exhausted. However, during my stay a diamond had been found, which the lucky finder afterwards sold for £400. In consequence a number of fresh searchers arrived at the gem-pits, and when I visited them 160 to 180 seekers were engaged with sluices and sieves in thirty or forty deep pits.

The road to Boralu turns off before reaching Dena Pitya in a north-westerly direction, sometimes passing through the loveliest palm forest, sometimes through a dense jungle, and then again between bright green paddy-fields or marshy meadows, where black buffaloes roll in the mud covered with graceful white herons. After a few miles' drive we reach the pretty lake of Boralu, round which the road runs, sometimes following the line of the shores, sometimes making wide *detours*. The shores are covered with a rank vegetation, and wooded hills form the background on every side. One small island, covered with wood, lies alone in the midst of the lake. The numerous tongues of land which run out from the shore, break the line in a very pleasing manner; but its chief charm lies in the utter solitude, the total absence of all civilized life. Even a drive round the lake betrays no human presence; nothing is to be seen from the road but the tall jungle.

The lake itself, however, and the surrounding country are rich in animal life. Whenever I went I unfailingly found great green iguanas, from six to seven feet long, basking on the shore (*Hydrosaurus salvator*). Once I was startled by a huge snake, about twenty feet in length (*Python molurus*); but the monster unfortunately glided off at once from the rock into the water, before I could get my gun ready to fire. Hunting monkeys was more interesting; their scolding was to be heard on all sides; and I here shot several fine specimens of the tawny Rilawa (*Matacus sinensis*), and of the large black Wanderoo (*Presbytis cephalopterus*). But the most

successful sport was shooting water-birds and waders, particularly several species of water-hens, herons, *Ibis*, flamingoes, pelicans and others. These come down in vast flocks at sunset, and fly across the lake to seek their homes for the night. I have shot half a dozen in the course of a quarter of an hour. The thicket, too, on the banks of the lake, gay with the lovely golden umbels of the *Cassia*, and the purple rose-like flowers of the *Melastoma*, is alive with small birds.

At a short distance beyond the northern end of the lake, and divided from it by a few wooded hills, lies the Aretshi's garden grove, a perfectly delightful spot, where I spent four days. The simple bamboo hut at which I alighted is completely hidden among bananas, and stands on the rise of a steep hill, whence the views are lovely over the green meadows, the dark masses of forest, and the floating blue of the nearer hills; the purple range of central mountains fills up the background. Nothing whatever is to be seen of the scattered huts of the natives, which lie among the surrounding woods; and the exquisite pleasure of total solitude is enhanced by the variety and abundance of animal life in this particular neighbourhood. I shot here numbers of fine birds, monkeys, flying foxes, iguanas, etc., and once a porcupine more than three feet long (*Hystrix leucura*). Nor was there any lack of handsome butterflies and beetles. The boggy meadow-land close to the lake is in many places covered with large plants of the curious insectivorous pitcher-plant (*Nepenthes distillatorium*). The elegant pitchers, sometimes six inches long, hang at the end of the leaves, and are commonly closed by a pretty little lid; I often found them to contain a number of captured insects. Lovely birds (*Ampelidae* and *Nectariniae*—the brilliant honey-birds) fluttered like humming-birds close over the blossoms of the flowering shrubs.

Nowhere in the lowlands of Ceylon—so far as I visited them—did I find the forest so beautiful, or the trees so well grown and so various in species, as in the neighbourhood of Boralu. A walk round the lake leads the wanderer through the loveliest part of it. In some places the primaeval forest is such an impenetrable tangle of creepers woven and knotted round the piles of decaying giants, that even with an axe it is impossible to advance a step into this chaos of plant-life. *Aristolochiae*, *Piperaceae*, wild vines and pepper vines, *Bauhinia* and *Bignonia*, festoon the branches of the trees together in such dense confusion that it is only here and there that a ray of light penetrates between them. The trunks even are overgrown with parasitic ferns and orchids. I sat for hours in happy

contemplation, sketch-book in hand, intending to secure some reminiscence of this forest scene; but I rarely came to any result, for I could never tell where to begin, or, if I made a beginning, how to give any approximate idea of all this fairy-like beauty. Nor did the photographic camera help me, for the green masses of woven and tangled stems and leaves are so impervious that a photograph shows nothing but an inextricable medley of branches, aerial roots, and foliage, while in living actuality they are a delight to the eye.

The undulating ground which surrounds his garden plot had been devoted by the Aretshi to the culture of lemon-grass—a very dry kind of grass, from which, by a simple process of distillation, oil of lemon, a highly prized perfume, is obtained. The lemon-like fragrance fills the air of the whole neighbourhood. The workmen who were employed in distilling it, and in the care of the banana plantation, lived in a dozen or so of scattered huts, delightfully situated in the deep shade of the forest, under the protecting branches of huge bread-fruit and jack trees; clumps of slender Areca and Cocos-palms, with here and there a kittool or a talipot, lifting their plumy heads high above the common growth of the forest, betray the lurking place of the invisible bamboo huts. My visits to these homes and my acquaintance with their simple and child-like inhabitants almost made me envious of these kindly and contented children of nature. They were all pure Cinghalese, their colour a fine cinnamon brown, and their forms slender and delicate; they wore no clothes but a narrow white loin-cloth. The merry, pretty boys were my eager help-mates in collecting plants and insects, while the graceful black-eyed girls twined wreaths of flowers and decorated my little bullock cart with the loveliest garlands. Then, late in the evening, when the brisk little oxen were harnessed to the narrow twowheeled vehicle, in which there was barely room for the Aretshi and myself, and we set out at a round pace, the children all thought it delightful to run by the side of it for some distance. As we drove along the shores of the lake, a crowd of twenty or thirty of these graceful little creatures would keep up with us, quite indefatigable, and shouting and waving palm leaves. I could never cease wondering at their swift pace and powers of endurance. If we turned into the dark forest, the boys would light palm-torches and run on in front to light up the way; or at a sudden curve in the road a shower of scented blossoms and a merry giggle would betray the presence of some small Dryad hidden in the shrubbery. Among the girls there was one, the Aretshi's niece, a girl of about sixteen, whose perfect figure and form might have served as a

model for a sculptor; and several of the boys might have vied with Ganymede in beauty. One of them could swing himself up on to the shaft of the cart when we were going at full trot and leap over the bullock's back. With such sports as these the village youth would accompany us for a long distance, till one by one they had vanished in the darkness. Then numbers of splendid glow-worms and fireflies took the place of the torches; the palm forest looked as if it had been illuminated while I travelled on, full of delightful recollections, back to the quiet rest-house at Belligam.

CHAPTER XV

MATURA AND DONDERA

THE longest expedition that I made from Belligam, towards the end of my stay there, was to the southernmost point of Ceylon, Dondera Head or Thunder Cape. Close below it, and somewhat to the westward, is the town of Matura, on the Nilwella Ganga, the Blue sand river. The road between Belligam and Matura, along which I travelled on the morning of the 18th of January, is the continuation of the lovely palm avenue from Galle, and offers the same variety of luxuriant and beautiful scenery. In a light carriage the drive took about three hours.

The town of Matura, the most southerly of all the towns in Ceylon, was, in the seventeenth century, in the hands of the Dutch, and a thriving and important trading port, the centre of the cinnamon trade of the southern provinces. Most of the important buildings in the town are of Dutch construction, as well as the extensive fort which is near the mouth of the river, on the eastern bank. The river here is as wide as the Elbe at Dresden, and a handsome new iron bridge connects the two banks. At the western end, on the right bank, is the old Dutch redoubt, the Star-fort, and here, in the irregularly built casemates, I took up my abode for a few days, at the invitation of some friendly English officials. These three jolly friends had made themselves most comfortable in the low many-cornered rooms of the old out-work, whose thick stone walls kept them delightfully cool; and their lodgings were picturesquely decorated with wood-cuts out of European illustrated papers, and with Cinghalese weapons, chattels, and skins of beasts. The old Dutch

gateway, over which the words "Redout van Eck" are still plainly legible, leads out into a pretty flower garden; and the inside walls of the fort, as well as the well in the middle of the garden, are clothed with every lovely species of creeper. A few tame monkeys and a very comical old pelican, with a variety of small birds, are a constant source of amusement.

A delicious cold bath and a capital English breakfast, which was doubly welcome after my course of vegetarian diet at Belligam, so completely revived me in the course of an hour or two, that I decided on proceeding that same day to Dondera; so I set out at once in a carriage, accompanied by the headman Ilangakoon, the most illustrious native personage now living in the island. He is, in fact, the male representative of the old kings of Kandy, and resides in a pretty, nay, comparatively speaking, a splendid palace in Matura, near the mouth of the river. He had visited me a week previously at Belligam, had given me several rare and handsome birds, and had begged me to visit him at Matura. The reception he gave me was not less kind than magnificent. He would not be excused from conducting me himself to Dondera. His carriage, an elegant London-built phaeton, was drawn by two good Australian horses, and a swift out-runner went in front to clear the way—a fine black Tamil, in a livery embroidered with silver and a red turban.

The road from Matura to Dondera, a distance of five miles, runs eastward, first along the left bank of the Nilwella river, through the picturesque Pettah or native town. The wooded hills between the river and the sea are covered with beautiful gardens and villas, some belonging to the wealthy Cinghalese and some to English officials. Beyond this the way lies along the seashore, through jungle and Cocos-woods alternately. This is the eastern limit of this vast cocoa-nut grove; for a few miles farther on, a hot desert of thirsty shore begins, with long stretches of salt marsh, which extend beyond Hambangtotte as far as to Batticaloa. Dondera Head is visible as a long blue promontory, covered with cocoa-nut palms, for some time before it is reached. It is the southernmost point of Ceylon, and is in 5° 56' north latitude. The temples built on this headland have for more than two thousand years been the goal of pilgrims innumerable, and are the most famous in the island next to those at Adam's Peak. Crowds of natives come here to worship every year. These sanctuaries have been alternately dedicated to Buddha and to Vishnu, varying with the supremacy of the native Cinghalese, or their

Malabar conquerors. Only three centuries ago the principal temple was an Indian structure of great magnificence, and so large that, as seen from the sea, it looked like a town of some extent; it was decorated with thousands of columns and statues, and with gold and precious stones of every description. In 1587, however, all this splendour was destroyed by the Portuguese barbarians, who sent home enormous quantities of the precious spoil. It is possible to judge of the vast extent of this gigantic temple from the quantities of broken pillars which stand up from the soil. In one corner of the precincts a large dagoba is still standing, and close to it several bo-trees or sacred figs.

The remains of a smaller temple are to be seen at the extreme end of the narrow tongue of land, which forms the southerly termination of Dondera Head. These are octagonal porphyry pillars, standing up lonely and neglected on the bare granite soil, and sprinkled by the spray from the ocean surf which breaks all round them. In the sheltered pools between the rocks I found a variety of beautiful marine creatures, and lovely corals grow at their feet. Looking westward from this advanced post of rock, the eye glances along the palm-grown strand towards Matura; eastward, towards Tangalla; on the north the view is shut in by the dense forest, while to the south it is unlimited over an infinite extent of ocean.

The ship our fancy sends across the waters to the south pole will find no land that the foot of man has ever trodden, and beyond that land again it would have far, very far to sail before it reached another shore. If the ice-bound continents of the south pole did not lie in the way, it would navigate, unhindered, the whole southern hemisphere of the globe, and see no land till it should reach Mexico, near Acapulco, on the northern side of the equator.

I sat a long time, lost in thought, on this extreme point of Ceylon for it was, in fact, the first time I had ever reached the southernmost end of any land. I was roused from my reverie by a party of Buddhist priests, in their yellow robes, who came to invite me and the headman to visit the temple, which was decorated for a festival. We afterwards went to see a curious primaeval ruin at some distance in the forest, built of enormous stones like a Cyclopean wall; and it was late in the evening before we returned to Matura.

The following day was spent in a long excursion by sea. Ilangakoon had placed a fine large sailing boat at my command, with eight rowers, and in this I went out a considerable distance to the southwards, far

beyond Dondera Head. The weather was glorious, and a strong north-east monsoon filled the large square sail so effectually, that some of the boatmen were obliged to sit on the outrigger beam to prevent the boat capsizing. The rate at which we were driven southwards was nearly that of a rapid steam-ship; I calculated it at from ten to twelve miles an hour. The lightness with which these tapering Cinghalese canoes cut through the waves, or rather glide over their crests, is very remarkable. The farther we got from the island the more plainly could we see the central highlands, blue in the distance, and towering above the flat coast; above them all Adam's Peak.

Flying over the foaming waves we had gone about forty or fifty miles from the shore, when a broad smooth stretch of water became visible, extending for miles in a direction nearly coinciding with that of the wind, from north-east to south-west. I supposed it to be a pelagic stream or current, one of those smooth narrow streaks which are often to be seen in the Mediterranean as well as in the ocean, lying across the wind-tossed waters, and owing their origin to the association of vast swarms of marine creatures. As we came close to it I found I had conjectured rightly, and was rewarded by a wonderfully rich and interesting haul. A dense crowd of pelagic creatures: *Medusae* and *Siphonophora*, *Ctenophora* and *Salpae*, *Sagittae* and *Pteropoda*, with an infinite variety of larvae of Annelida, Radiata, Crustacea, Mollusca, etc., were swimming and floating in myriads, and I had soon filled all the glass vessels I had taken with me. I only regretted that I had no more, so as to carry away sufficient specimens of these zoological treasures, among which were many new and undescribed forms.

Rich in the possession of this wonderful collection, which promised to supply me with occupation for years to come, I returned to Matura towards evening. It was a delightful recollection to carry away of the fifth degree of latitude. My Cinghalese boatmen took advantage of the north-east breeze with so much skill that we made our way home almost as quickly as we had come out, and we landed at the mouth of the river. The view of the estuary from the sea is very picturesque, being protected by a rocky island, on which two cocoa-nut palms grow, one upright and the other aslant. The two sides of the river are covered with wood. On the following day I again made an expedition in a boat on the river, and admired the wonderful luxuriance of this primaeval forest.

On my return to Belligam I had to face one of the hardest duties I had to fulfil during the whole of my stay in Ceylon: to tear myself away from this lovely spot of earth, where I had spent six of the happiest and most interesting weeks of my life. Even now my thoughts linger there so regretfully that I feel as if that parting had to be gone through again and again. The room which for a time had been my laboratory, museum, and studio, in which I had gathered such a stock of new and wonderful ideas, was empty and bare; and out in the garden, under the huge teak tree, stood the two heavily laden bullock-carts, which were to convey my thirty different packages, with my various collections, to Galle.

In front of the door stood a little crowd of the brown inhabitants of the village, to whom, during these forty days I had been a constant subject of growing curiosity and admiration. I had to take leave separately of each of the more important native officials, particularly of the two headmen. Worthy old Socrates looked quite doleful as he brought me for the last time the best of his bananas, mangoes, pine-apples, and cashew nuts; Babua clambered for the last time to the top of my favourite palm tree, to fetch me down the sweet nuts. But hardest of all was the parting from my faithful Ganymede; the poor lad wept bitterly, and implored me to take him with me to Europe. In vain had I assured him many times before that it was impossible, and told him of our chill climate and dull skies. He clung to my knees and declared that he would follow me unhesitatingly wherever I might take him. I was at last almost obliged to use force to free myself from his embrace. I got into the carriage which was waiting, and as I waved a last farewell to my good brown friends, I almost felt as if I had been expelled from paradise.

Adieu, Bella Gemma.

CHAPTER XVI

THE COFFEE DISTRICT AND HILL COUNTRY

I HAD made up my mind to devote the last month of my stay in Ceylon to a visit to the hill country, where the flora and fauna, as well as the climate and general character of the country, are so different from those of the coast that they might be several degrees of latitude apart. When, in a single day, we go up the six thousand feet from the palm gardens of the lowlands to the primaeval forest of the hills, the difference in climate and scenery is fully as great as between the wooded wilderness of Brazil and the high plateau of Peru, or between the date groves of Egypt and the flowery meadows of the Alps.

The hill country of Ceylon occupies about one-fourth of the whole extent of the island, and lies at an average height of from four thousand to six thousand feet above the sea; only the loftiest mountains rise to seven thousand or eight thousand feet. The northern half of the island is quite flat; in the southern half the highlands rise somewhat abruptly, a steep and unbroken line of ramparts, the eastern and southern declivities being much more precipitous than the western and northern. The level tract of plain which surrounds the hill country and parts it from the sea is twice as broad on the east as it is on the west. A subsidence of a few hundred feet would suffice to submerge three quarters of the island, and leave the hill country rising abruptly from the surface of the ocean. This vast rocky mass is almost exclusively of crystalline formation, consisting principally of gneiss with intruded veins of granite, trachyte and basalt.

Even so late as at the beginning of this century, the hill country of Ceylon was in parts quite unknown, and on a map published in 1813 by Schneider, the government engineer, not less than two-thirds of the whole kingdom of Kandy is indicated by a blank space. When, in 1817, Dr. Davy—the brother of the famous Sir Humphry—undertook the first expedition through the island, he met with infinite difficulties. The greater part of the mountainous centre was impassable, covered with an unbroken and impenetrable forest, untrodden by any European. Herds of elephants, bears, tigers, boars, and elks were the lords of this wilderness; the only trace of human life were the wild hordes of Veddahs, now fast disappearing. No road of any description intersected the forest, no bridges spanned the headlong brooks and streams which fell in cataracts down the inaccessible gorges.

In a comparatively short time, however—in less than fifty years—the character of the country had completely altered. In 1825, that enterprising governor, Sir Edward Barnes, formed the first coffee plantation in the hill country, in the neighbourhood of Peradenia, and proved that the soil and climate there were especially favourable to the cultivation of the berry. Encouraged by his example, and spurred to energy, partly by the hope of large profits and partly by the romantic and adventurous life in the wilderness, a perfect army of coffee-planters invaded the hill forests of Ceylon, and in less than twenty years had, by axe and fire, transformed the larger part of it into profitable plantations. Whole forests were annihilated on the steep slopes by the plan of cutting down the upper ranks of the gigantic trees, and so felling them on to those below, which had been half cut through on the upper side. The enormous weight of these dense masses of vegetation, bound and tied together with creepers, uprooted the trees below, and the whole wood crashed and slipped like an avalanche down into the valley. The mass was then set on fire, and this burnt soil was found excellent for the coffee shrub. The produce was so abundant and the whole conditions of coffee growing were rendered so exceptionally favourable by a concurrence of political events and commercial treaties, that only twenty years after it was first started in Ceylon, speculation in coffee had reached an amazing height.

The reaction which inevitably follows excessive speculation was, of course, soon felt. As in the case of the Californian and Australian gold mines, or the diamond diggings of South Africa, the brilliant success of a few fortunate individuals tempted a number of imitators,

who had neither capital, prudence, or knowledge. Between 1845 and 1850 more than five millions sterling of private property was lost through ill-luck or mismanagement in coffee planting. Then, as always must happen, sooner or later in the cultivation of any produce, ere long numbers of dangerous natural foes made their appearance, inflicting great injuries on the plantations—some animal, some vegetable; for instance, the greedy Golunda rat (*Golunda elliotti*), and the mischievous coffee-bug (*Lecanium coffeae*), besides a variety of vegetable parasites. Within the last ten years the plantations have been almost devastated by the worst foe of all—a microscopic fungus (*Hemileja vastatrix*). The disease in the leaves occasioned by this fungus has spread so widely and rapidly, and has proved so incurable, that on many estates coffee growing has been given up. Tea and quinine (*Cinchona* bark) have taken its place, and with great success.

Whether in the future tea, coffee, or *Cinchona* trees are destined to be the staple of cultivation in the coffee districts, as they are still called, there can be no doubt that the climate and soil of the uplands of Ceylon are extraordinarily favourable for the growth of these, and probably of many other valuable vegetable products. Before many more years have passed, the whole of the hill country, with the exception of a very few spots, will be productive land of the very first class. Every year sees the spread of the network of coffee district towards the remoter parts of the mountains. I had to go some considerable distance before I could see any extent of country still lying in its virgin state and even there, in the immediate neighbourhood and on every side of the untouched forest, I found fresh clearings which were being brought into tilth by axe and fire.

It was my most eager wish to see one of the wildest parts of the primaeval forest in the hill country, and I owe its fulfilment chiefly to the kind offices of Dr. Trimen, the Director of the Gardens at Peradenia. During my visit to him we had agreed to go together, in the middle of February, to Newera Ellia, the famous hill sanatarium, and to make an excursion from thence to Horton's Plain. This is the south-eastern portion of the central plateau, a wild and rarely visited spot, where it ends in the precipices known as the World's End, with a fall of nearly five thousand feet. From thence we proposed to go up to the hill country of Billahooloya, then westwards to Ratnapoora, the city of gems, and finally down the Kalu Ganga, or Black River, in a boat to Caltura, at the mouth, on the south-west coast. My friend, Dr. Trimen, most kindly

undertook to make all the necessary arrangements and preparations; and as we were to camp out for a week in an absolute desert, and in the highest and coldest part of the mountains, we were obliged to organize a transport train of at least twenty coolies, to carry our food, wraps, beds, tent, etc.

I meanwhile took advantage of the first days of February to visit the western hills, and particularly the famous mountain known as Adam's Peak. As soon as I returned to "Whist Bungalow," Colombo, at the end of January, I began my preparations to start on this excursion. At the same time I spent nearly the whole of the first week in February in seeing the most extraordinary and interesting spectacle which is ever to be seen, not merely in Ceylon—and there but rarely—but perhaps in the whole world—an elephant hunt. By an elephant hunt in Ceylon is understood the capture and taming of a whole herd of wild elephants, which are decoyed and entrapped by tame ones. Formerly, when the herds of wild elephant in Ceylon were still very numerous and mischievous, and when tame elephants were largely used in road making and other works, such hunts were more frequent. At the present time they are less often undertaken and not on so grand a scale; and as an elephant hunt of this kind is both expensive and difficult, it is usually reserved for some great festival. The occasion of the hunt I was so fortunate as to see, was the visit of the two sons of the Prince of Wales, who spent a few weeks in Ceylon on their way home from a voyage round the world. No less than three thousand beaters had been employed for three months in driving the wild elephants together, from the forests towards the Corral of Lambugana, at which place a temporary village or wooden houses, a Corral-town, was erected to accommodate the numerous spectators of this interesting scene. The capture and imprisonment of the wild elephants was accomplished during the first three days of February, but I must postpone any description of the spectacle, as it would lead me too far from my immediate subject.

For the same reason I must omit any detailed account of the first part of my expedition to the hills, from Peradenia to Gampola and Deck Oya, as well as the ascent of Adam's Peak. It was on the 12th of February, in the loveliest weather, that I ascended this famous mountain, one of the most remarkable peaks in the world, and I hope on a future occasion to give a full and connected account of this delightful excursion. The point whence we started, and to which we returned, was Saint Andrews, the highest coffee plantation in the south-west angle of the

hill country, immediately at the foot of Adam's Peak. The owner, Mr. Christie, who entertained me there most kindly for a few days, himself guided me to the summit of the sacred mountain.

From thence I went in a north-easterly direction towards the centre of the hill country, to spend a few days at Newera Ellia, the favourite resort of the English. The distance from Saint Andrews to Newera Ellia is from forty-five to fifty miles. Only a few years ago the path lay for the most part through thick forest, but now it passes by coffee and *Cinchona* plantations for almost all the way. It took me two days of steady walking to accomplish this journey, though the weather was lovely and not too hot; and I only took two Tamil coolies with me to carry my baggage. On the first day, February 24th, I walked twenty-four miles between six in the morning and eight in the evening, and twenty the next day. As it was the coolest season of the year in this part of the island, and the temperature in the shade at noon was not above thirty to thirty-two degrees centigrade, I could walk on, even at midday, with no more than an hour's rest. I again had recourse to a wet handkerchief as a protection against the sun, placing it over my head and neck under my sola hat; I could cool it afresh every quarter of an hour in the brooks which trickled on both sides of the road.

As extensive plantations, consisting of long stretches of land planted with only one kind of product, are no less monotonous in the tropics than among our cornfields and vineyards, I had rather dreaded this two days' walk among the coffee estates; but it proved far more interesting than I had ventured to hope. The hill slopes are intersected in many places by deep ravines, down which fall foaming streams, often breaking into beautiful cataracts and embowered in lovely ferneries and jungle growths. Several of them are spanned by handsome bridges, but in some places the only means of crossing them is by a tree-trunk laid across from one side to the other, and sometimes the rope-like stem of a creeper has been carried across, serving as a balustrade to hold on to. Sometimes, however, there is no choice but to walk across, balancing yourself as best you may on the swaying trunk; and it is only to be hoped that you have a steady brain and will not be made giddy by the rush and roar of the wild mountain torrent that dashes over the broken boulders below. My old gymnastic practice, long since forgotten, came to my aid at this juncture and stood me in good stead.

Now and then the path, which ran sometimes up and sometimes downhill, cut across a wide deep valley, where some remains of the

original forest was left standing on the steeper and more inaccessible slopes. The enormous trees, looking like massive columns, and their spreading crowns, from which the creepers hang in heavy festoons and curtains, give us still some notion of the extraordinary wealth and splendour of the vegetation which must here have fallen a sacrifice to the irresistible advance of civilization. For a short distance we had to hew our way laboriously with the axe through the thicket itself, and could inspect more closely the varieties of the trees and plants which composed it: principally species of laurels and myrtles, with *Rubiaceae*, etc. The leaves of these mountain forest-trees are for the most part of a very dark brownish or even blackish green, and dry and leathery in texture. Lovely garlands of hanging plants stretched from tree to tree, and the trunks themselves were gorgeous with the curious flowers of orchids and *Bromelia*. Among the climbers a conspicuous species was *Freycinetia*, a plant closely allied to *Pandanus*; the flame-coloured spathes of the flowers seemed to glow among the spiral tufts of leaves. The beautiful palms of the lowland have disappeared; their place is supplied by the wonderful tree-ferns, which are among the most graceful and charming growths of the tropics. At the bottom of the shady gorges the shining black trunks of *Alsophila*, one of the finest of these tree-ferns, grow to a height of twenty or thirty feet, and their spreading crown of plumes is composed of deeply cut fronds, from eight to twelve feet in length. An immense variety of smaller ferns, and their delicate allies the *Selaginellae*, cover the rocks on every side.

While our devious path through the hill coffee districts was thus diversified by these beautiful wooded ravines, their luxuriant vegetation forming a delightful foreground to the picture, the vista of distant landscape between the blue hills was often quite enchanting; the slender cone of Adam's Peak standing up high above its neighbours. In the hilly landscape of Maskilia especially—a gorge full of beautiful waterfalls—the peak towers up grandly in the background.

The aspect of the plantations themselves, too, is very pretty. The coffee trees in the low country, as cultivated by the Cinghalese near their huts, grow with tall stems from twenty to thirty feet high; but in these hill-plantations they are generally kept cut low to increase their productiveness, and are spreading shrubs not more than three or four feet above the soil. The handsome, dark green, shining leaves form a close surface, with the bunches of fragrant white blossoms or dark red berries, something like cherries, rising conspicuously above them. In many

districts we now see the sweet-scented tea shrub and slim *Cinchona* tree, alternating with the coffee plants, the original occupants of the soil. The *Cinchona* has a pretty white flower, and the young leaves are of a splendid red colour. The straight slender trunk is of a particularly hard and close grain, and a small *Cinchona* stem, which I pulled up myself at Adam's Peak, served me as an "alpenstock" through all my mountain walks.

An interesting and amusing feature in the foreground of the landscape were the swarthy labourers, the Tamil coolies. These are of pure Dravidian race, a branch of the human family which was formerly included with the Indo-Aryan, but of late years has very properly been regarded as distinct. They are quite unlike the pure Cinghalese, and keep themselves entirely separate. Their language, Tamil, has nothing in common with the Pali, and recent linguists can detect no relationship between them. Most anthropologists regard the Tamils or Malabars as a remnant of the original natives of Hindostan, who were gradually driven southwards by the Aryan races advancing from the north; but in Ceylon they assumed the part of conquerors, gradually exterminating the Aryan-Cinghalese, who had previously taken possession of the island. At the present day not merely is the Tamil population the most numerous throughout the northern half of the island and a considerable part of the eastern side, but in the hill country they have also spread and multiplied at the cost of the indolent and languid Cinghalese, thanks to their greater energy and powers of endurance. A very large number of Tamils or Malabars, as they are called—50,000 about thirty years since, and more than 200,000 now—cross over annually in the winter season from the mainland of Coromandel, by Adam's Bridge to the island, and remain six or eight months to work in the plantations; they then return with their earnings and spend the rest of the year at home.

The Tamils are as unlike the Cinghalese in stature, build, colour, and character, as they are in speech, religion, manners, and habits. The Cinghalese are mostly Buddhists, the Tamils worship Siva. The Tamils are always much darker skinned, coffee-brown verging on black; the Cinghalese vary between cinnamon-brown and a sort of golden-tan colour. Both have long, smooth, black hair, sometimes with a slight wave or curl, but never woolly. The beard is more abundant in the Tamil than in the Cinghalese, whose features, too, differ less from the Mediterranean type than those of the Tamils. In the Tamil the brow is lower, the nostrils are broader, the lips thicker and more projecting, and

the chin heavier; the expression is grave and gloomy. I rarely saw a Tamil laugh, and never so gaily as is quite common with the Cinghalese. The structure of the skeleton is taller and more powerful in the Tamil, and his muscular system better developed, so that he displays ease and endurance in toil for which the Cinghalese is useless. The singularly slender and feminine character of the limbs which is so conspicuous in the Cinghalese men is never seen in the Tamils; even the women are stronger and more sinewy. Still, the Tamil is far from being particularly bony or robust, he is, on the contrary, tall and graceful; the general proportions of his frame correspond so nearly with the artistic standard of beauty that the Dravida cannot be included among the inferior races of humanity—on the contrary, many specimens come remarkably near to the Greek ideal. As their clothing, while labouring in the plantations, is restricted by the men to a small turban and a strip of loin-cloth, and by the women to a short petticoat and a loose handkerchief tied across the body, or a short white jacket—and this is not unfrequently dispensed with when at work—a walk through the plantations affords ample opportunities for admiring the beauty of their forms. Their movements, too, are characterized by a certain native grace which is fully brought into play in their different attitudes and occupations, for the labour in the plantations is varied and severe. How much better might a sculptor here study the true beauty and proportion of the human form among these naturally developed models, than in the life-schools of European academies, where some model, found with difficulty among the degenerate sons of civilization and forced into some unwonted attitude, is but a poor substitute for the genuine child of nature!

I accepted a kind invitation from one of the chief planters in the hill district, Mr. Talbot, and spent the night of February 13th at his house, Wallaha. As there are neither hotels nor rest-houses in the hill country, excepting at one or two important stations, the traveller is almost entirely dependent on the hospitality of the English planters; and this is displayed everywhere and on every occasion with unlimited liberality, as though it were quite a matter of course. It is true that many of the houses on the plantations stand so isolated in the midst of a lonely wilderness, that any visitor is welcome; and a total stranger just arrived from Europe, with a fresh stock of news from dear home, is hailed as a delightful surprise. The hospitable and friendly reception I everywhere met with I treasure among my most pleasing memories. Nothing is more soothing to the wanderer than the incomparable comfort of a British home: a cool bath, an excellent dinner, an amusing chat over a glass

of good wine, and at last a soft mattress after ten or twelve hours' walking up hill and down dale, along the stony shadeless paths through the plantations—six of these hours under a degree of heat to which our worst dog-days are a trifle.

Sometimes, however, this enjoyment is somewhat qualified by the strict rules of English etiquette, in which even a solitary planter dwelling in the wilds of the tropics would think it derogatory and ill-bred to fail. I remember with dismay a certain evening, when I arrived, after sundown, and quite tired out, at a very remote plantation, and the hospitable master gave me distinctly to understand that he expected to see me at dinner, which was just ready, in a black tail-coat and white tie. My sincere regrets and explanation that my light tourist's kit for this excursion in the mountain wilds could not possibly include black evening dress, did not prevent my host from donning it in my honour, nor his wife, the only other person at table, from appearing in full dinner toilet.

Excepting only this and some other trifling formality which seemed strange to an unceremonious German like myself, I have nothing but delightful recollections of my visits to the English planters of the Ceylon hills. Their lonely lives are unvaried but by hard work, and they have much to sacrifice. It is a great mistake to suppose that their position is at all analogous to that of the great slave-owners of tropical America, or that they idly reap a splendid fortune by the labours of hundreds of black coolies. On the contrary, work, is the watchword here—work, think, and superintend from dawn till night. I always found my hosts at work by daybreak; a large portion of the day is spent in visiting the remoter portions of the vast estates, in giving instructions to servants and overseers, in accounts and correspondence. Much of the planter's success depends solely on careful calculations, though the relations of the weather to the situation, soil, etc., play a large part in the matter. The residences being as a rule very far apart, neighbourly intercourse is extremely limited, and the ladies, particularly, lead very lonely lives. Many of them find small compensation for this privation in the perfect freedom it affords them within the limits of their extensive estates, or in the constant presence of the beauties of nature, which for an appreciative soul must here be an unfailing source of enjoyment.

The planter's bungalow is usually a one-storied house, built of stone, with a wide, projecting roof and verandah, surrounded by a lovely garden, and fitted with every English comfort adapted to the circumstances. Close to the house, there is generally a clump of *Eucalyptus*

globulus, and the same tree is planted here and there, all over the estates. This Australian shrub is considered a valuable neighbour, as it is said to dry the soil and render the air wholesome.

The huts of the Tamils are often grouped into a small village, generally at some distance from the house, and near the coffee-stores. Of late years much has been done in planning and making good roads, and as the plantations extend and multiply, the greater part of the hill districts will, in time, be traversed and accessible by carriage roads.

CHAPTER XVII

NEWERA ELLIA

THE most visited and best known town in the hill country of Ceylon, and the most popular summer resort in the island, is Newera Ellia—the city of light—or, as it is pronounced, Nurellia. This town stands in an elliptical mountain valley, or *cirque*, between one and two miles across; the mountains that surround it range from 1500 to 2000 feet in height. The plateau itself is at about 6000 or 6200 feet above the sea level. The climate and scenery here are strikingly different from those of the coast, and resemble those of the mountain chains of central Europe; for though the tropical sun raises the temperature at noon to twenty-five or thirty degrees, the nights are always cool, and early in the year it is not unusual to find the grass white with hoar frost before sunrise, while the waterjars placed out of doors to cool are covered with a film of ice. Fires are lighted in the living rooms, morning and evening, almost every day, and the low stone houses are all built with chimneys.

When we remember that Newera Ellia is only seventy degrees north of the equator, an average annual temperature of from fifteen to sixteen degrees centigrade (below sixty degrees Fahrenheit) at a height of only six thousand feet above the sea appears extraordinarily low. This, like the comparatively low temperature which prevails throughout the hill country of Ceylon, is, no doubt, due, in the first instance, to the situation of the island, as well as to the excessive evaporation by day and the rapid cooling at night by radiation. The air is always damp. Dense clouds often fill the cirque for the whole day. The rainfall is very

great, and numbers of springs and rivulets, which tumble down the cliffs and slopes, maintain a luxuriant vegetation and feed the little lake which occupies the southern half of the plateau.

This superabundance of cool moisture, mist and cloud, rain and torrent, intensifies the solemn and melancholy impression produced by the monotonous aspect of the surrounding hills, the sombre colour of their dark woods, and the olive-brown hue of the peat-like soil and marshy meadows. It is sometimes impossible not to fancy that one has been transported to the Scotch highlands, fifty degrees further north; and here, in Newera Ellia, precisely the same gloomy feeling came over me again and again as had possessed me when I travelled through that country in the autumn of 1879. I believe, indeed, that it is this very similarity in climate and scenery which accounts, in great measure, for the love of the British colonist for Newera Ellia. The fire on the hearth has no less a charm for him as a reminiscence of his distant northern home than the endless procession of grey clouds out of doors, as they come rolling down from the gloomy black forests on the dingy dank moor, and the shuddering surface of the icy lake.

This remote and dismal spot, buried in the highest part of the wooded mountains, had been known to the natives of the hot coast for several centuries, and one of the early kings of Kandy is said to have found it a secure retreat from the Portuguese conquerors so early as in 1610; but it was never visited by any Europeans till 1826. Some English officers, out elephant hunting, came upon it by accident, and they gave such a highly coloured report of the refreshing coolness and beauty of this high valley, that Sir Edward Barnes, the governor at the time, built a bungalow there for himself, and a sanatarium for the British troops, which was opened in 1829.

There is no doubt that the cold, damp air of Newera Ellia has a singularly refreshing effect on the health of Europeans, when they have become debilitated by too long a residence in the hot low-country; and when, in twenty-four hours, by railway and post-chaise, the traveller comes up to Newera Ellia from Colombo, he feels as if some magical change had been wrought. The unwonted pleasure of shivering with cold, and having only one side warm at a time in front of a fire; the exquisite delight of being obliged to encumber yourself with a great coat and shawl when you go out of doors, and of having to pile blankets on your bed before you can go to sleep—the contrast, in short, to the easy going and light clothing of the hot coast, makes the Englishman

feel quite at home, and he does nothing but sing the praises of Newera Ellia. If he were transported bodily to our wretched northern climate, perhaps he would not find its charms quite so great.

The merits of Newera Ellia as a sanatarium are, in fact, monstrously overrated. The climate is cold and damp; the temperature rises, on a clear winter morning, from about five degrees centigrade at dawn, to twenty-five or thirty degrees by noon—a difference of about twenty-five degrees in the course of six hours. This, of course, makes the visitor liable to sudden chills, and for rheumatic patients, or those susceptible to catarrh, it is perfectly intolerable. Indeed, I heard of several invalids who had been simply killed by the change of climate between Colombo and Newera Ellia. In spite of all this, partly by indefatigable puffing, and partly from its offering certain secondary and social advantages, it not only keeps up its reputation as a health station, but even continues to increase it. The number of English "cottages," which swarm upon the grass-grown soil of the valley, is added to every year; and if it goes on much longer Newera Ellia will be a large town, inhabited, however, only three or four months of the year—the dry season, from January to April. Later, during the south-west monsoon, the incessant rain renders it uninhabitable.

The severity of the rainy season, indeed, makes it very doubtful whether Newera Ellia can ever be, as many persons hope, a proper situation for the permanent establishment of schools and colleges for the children of Europeans born in Ceylon. Added to this, is the enormous costliness of rent and living. Nowhere in Ceylon was my slender purse so severely bled as in the wretched rest-house at Newera Ellia. For instance, eggs were sixpence each, butter a rupee a pound, and bad beer a rupee a bottle. Though every European in the hot towns, on the coast, is possessed by a secret longing to spend the cool dry season in Newera Ellia, he is obliged to consider twice whether his purse can stand so severe a pull.

It is most amusing to observe how adaptation to the theory of life in a fashionable watering-place has given rise here—at seven degrees from the equator—to precisely the same monstrosities and evils of civilization as in the most frequented bathing-places of Europe, fifty degrees further north. The stronger and the fairer sexes vie with each other in the elegance, costliness, and bad taste of their dress. The children appear in costumes, strangely similar to those in which we are accustomed to see their quadrumanous cousins in a show. The richest

among the residents try to out-do each other in the elegance of their carriages out of doors, and in the luxury of their furniture within. Among the Cinghalese stalls for the sale of fruit and rice, stand the booths loaded with luxurious trifles which are characteristic of a watering-place, where polite swindlers inflict a well-merited punishment on the spendthrift loungers by charging them tenfold the value of their wares. These fashionable European airs in the midst of the wild highlands of Ceylon, where elephants, bears, and leopards still people the woods within a few miles, struck me as doubly comical, arriving as I did, full of the impressions of my primitive mode of life among the natives of Belligam.

The illusion that one is actually in a European watering-place is rendered still more complete by the universal attempt to make the dinner resemble, as far as possible, an European meal. I was greatly surprised to see potatoes served in their skins, with fresh butter, fresh green peas, beans, cabbage, etc. All these excellent vegetables thrive in the gardens and fields round Newera Ellia almost as well as with us, and potatoes—the main point to the Germanic race—can be dug four times in a year from the same ground, if judiciously treated with a manure of bone-powder. Unluckily, their cost is proportionately high. But it is most amusing to hear the enthusiasm with which the phlegmatic Briton enlarges on the merits of potatoes and peas, and the comforts of a top-coat and fire. The real charm of life, it is evident, lies in contrast.

But the resemblance of this Promised Land of Newera Ellia to Northern Europe, though it has won for it the suffrages of the European colonists, is, after all, but superficial for the most part, and closer observation reveals many differences. This is equally true of the climate and of the vegetation, the two principal factors in the characteristic aspect of a country. With regard to climate, not Newera Ellia only, but all the hill country of Ceylon has marked peculiarities arising from its insular position in the Indian Ocean as an offshoot from the peninsula of Hindostan. The two trade winds—the dry north-east monsoon of the winter season, and the wet south-west monsoon of the summer months—in consequence of their local conditions, both produce a rain-fall, with this difference, that it is much heavier and more persistent during the south-west than during the north-east winds. The "dry season," as it is called, is here, as it is on the south-west coast, a mere figure of speech, as I know by experience only too well. During my three weeks' wanderings in the hill country, heavy storms of rain were frequent, particularly in the

afternoon, and of such tropical violence that, in spite of umbrella and waterproof, I had not a dry thread about me.

The flora of Newera Ellia, too, which at first sight appears surprisingly like our north European vegetation, proves on examination to be in many ways essentially different. The olive-green sub-alpine heath-meadows, which cover the greater part of the valley, are, it is true, mainly composed, as with us, of reeds and rushes (*Carices* and *Juncaceae*), and strewn among them we find many old favourites—violets, harebells, crow-foots, lily of the valley, valerian, chick-weed, knot-grass, raspberry, foxglove and others. But mixed with these we observe numbers of plants altogether new to us; as, for instance, handsome balsams with very singular flowers, fantastically coloured orchids, *Restiaceae* that look almost like scabious, large purple gentians, *Exacum* with yellow stamens, and above all tall *Lobelias*, with enormously long spikes of red blossom. If we follow the course of a stream up into one of the shady gorges, we at once find ourselves among a characteristically tropical vegetation, which at once dispels our illusions—noble tree-ferns (*Alsophila*), the huge shield-fern (*Angiopteris*) *Strobilanthus*, the handsome Nilloo, and the magnificent aborescent Rhododendron (*R. Arboreum*), which grows to a height of twenty to thirty feet, with a knotty stem and branches covered with gigantic bouquets of large deep-red flowers.

The difference is even more marked in the forest, which, with its dense and sombre masses, looks at a distance very much like our fir forests. It is composed of a great number of different species belonging, for the most part, to the myrtle and laurel tribes, to the *Ericineae*, *Guttiferae*, and *Magnoliaceae*. Although the very numerous species of these trees belong to such dissimilar families in the character of their flowers and fruit, they are curiously alike in their general appearance and mode of growth. Their leaves are leathery, dark or olive-green, and often woolly beneath; their tall columnar trunks are sometimes exactly like those of the pines of southern Europe, and terminate in a flat roof of forked branches, like a vast leafy umbrella. The lofty *Calophyllum* especially has a remarkable resemblance to a pine tree; many of the largest specimens have trunks from eighty to ninety feet high and ten or twelve feet thick, and the bark grows with a curious spiral twist. Here, in the cooler hill country, the forests are no less remarkable than in the hot lowlands for the immense variety and abundance of parasitic and climbing plants, though they are of other genera and species. The trunks are also often covered with a close tissue of mosses.

Many of the forests near Newera Ellia are now intersected by wide and well-made roads, or at any rate by bridle paths; and the languid child of civilization, as he lounges through them at noon, may indulge in a shiver at the thought that at night, on the very same spot—not a mile from his residence—wild elephants may cross the path, or a tiger fell and devour a wild pig. The energy of the vegetation in this wilderness is so irrepressible that the forester's axe is incessantly at work to keep these paths open.

I took advantage of my four days' visit to Newera Ellia to make some interesting expeditions in various directions. On the 10th of February I ascended the highest peak in the island, Pedro (or Peduru) Talla Galla, to the east of Newera Ellia, and kept my forty-eighth birthday on the top. This highest point of the island is 8200 feet above the level of the sea, and about 2000 feet higher than the plateau of Newera Ellia. It has its name, the Mat-cloth Mountain, from the quantities of rushes which grow in the marshes at its foot, and which are used for weaving mats.

It was a lovely sunny spring morning when I started from Newera Ellia, accompanied only by a Tamil coolie to carry my sketching apparatus and provisions, and we reached the top in two hours. The narrow path was at first very steep, but sloped more gradually as we got higher, leading through thick forests almost to the summit, across dancing mountain streams and little waterfalls. The most remarkable objects I met with in my walk were the large worms, for which the hill country of Ceylon is famous; they are the giants of their kind, five feet long, an inch thick, and of a fine sky-blue colour. I also here saw for the first time the beautiful mountain jungle fowl (*Gallus Lafayetti*), which I afterwards found in numbers at The World's End. The large ash-coloured monkey of the hill forests (*Presbytes ursinus*) was also to be seen, but was too shy for me to get a shot. The slopes of Peduru are wooded almost to the summit, varied by streaks of reddish yellow moss. There is no truly Alpine or even sub-Alpine vegetation in Ceylon. The snow-line, if there were one, could not come lower than fourteen or fifteen thousand feet above the sea.

The view from the treeless peak is really magnificent, embracing the chief part of the island as far as the sea, which is visible to the east and west as a narrow silver streak. On the east, the fine peak of Namoona rises above the valleys of Badoola; while on the west, Adam's Peak towers above everything. The grand panorama, as seen from either of

these summits, is monotonous in so far as it consists, for the most part, of dark green wooded hills, veined by the silver threads of numerous brooks and streams, and broken here and there by small patches of lighter green plantation. It is the feeling of vastness which chiefly impresses the mind in the midst of this sublime solitude, and the idea of contemplating from a single spot one of the richest and most lovely islands in the world. Early in the morning, the view from Peduru was perfectly clear and cloudless, but mists soon began to rise from the valleys, and packed into masses of fleecy clouds. I watched them gather and roll for some hours with the greatest interest, and have scarcely ever seen in our own Alpine countries any cloud studies to compare with those of the Cinghalese highlands.

On the 17th of February, which was again an exceptionally fine morning, I walked about five miles to the southwards, across the bridge at Ooda Pooselawa to the south-eastern limit of the plateau. Here I ascended a peak, from which I had a fine view to the south over Hackgalla. This hill was, in its form, quite the most beautiful I saw in Ceylon, and in the grand flow of its outline and composition of its masses reminded me of Monte Pellegrino, near Palermo. The deep wooded ravines, with cataracts in the heart of them, were wonderful for the beauty and variety of their tree-ferns.

On the following day, I turned my steps northwards, and made an excursion in the neighbourhood of Rangbodde, which is on the high road between Newera Ellia and Kandy. The road first ascends for about two miles to the top of the Rangbodde Pass, seven thousand feet above the sea. The ridge affords a magnificent view on either side; southwards, over the basin of Newera Ellia, with the beautiful peak of Hackgalla, and behind this the shining level of the ocean; northwards, across the wooded valley of the Kotmalle to the hilly district of Pooselawa. Among the numerous elevations, in the middle of the picture stands the tall double cone of Allagalla. The road may be traced downwards, in steep windings like a snake, to Rangbodde; and I walked along it for some miles, enchanted by the numerous pretty little torrents which fall on both sides into the narrow valley, and by the lovely vegetation—more especially the tree-ferns—which fringes their banks. The magnificent forest, which only a few years since covered the highest slopes, has almost everywhere given place to coffee plantations. The road was taken up by numbers of large bullock-carts, each drawn by four strong white zebus, and conveying provisions and luxuries up to Newera Ellia.

On the 19th I took advantage of the first glimmer of dawn to ascend the chain of hills which shuts in Newera Ellia on the west. From the top I had a glorious view of Adam's Peak and the intermediate range of Dimboola. At noon I obeyed an invitation from the Governor who had arrived the previous day at Newera Ellia with his wife and was staying in their pretty and comfortable country house Queen's Cottage, surrounded by a charming garden, on the western side of the valley. Here I could admire a lovely collection of roses, pansies, tulips, pinks, and other European flowers blossoming in perfection, with fine cherry trees, and other European fruit trees. These are splendid as to foliage and flowers, but produce no fruit.

Here I met Dr. Trimen, who had by this time made every preparation for our expedition into the wilds, and we set out that same afternoon on our journey to the World's End. We travelled but a few miles that day, to Hackgalla, two hours to the south, where the high road and civilization cease together. Here, at six thousand feet above the level of the sea and close to the southern slope of the fine peak of Hackgalla, is a botanical garden for tropical mountain plants, an offshoot of the great gardens at Peradenia, and like those, under the direction of Dr. Trimen. We spent the evening in walking through them, inspecting the nursery grounds for *Cinchona* and coffee trees, as well as the splendid tree-ferns and pitcher plants, of which enormous specimens are to be seen here. From the terraces of this garden, the highest in Ceylon, there is a fine view of the grand rock-pyramid, the peak of Namoona, which stands quite solitary on the eastern side of the valley of Badoola. We spent the night in the head gardener's bungalow, the farthest outpost of European civilization in this part of the hill country.

CHAPTER XVIII

AT THE WORLD'S END

THE extensive and uninhabited plain which stretches south of Newera Ellia to the very rim of the great central plateau of the island, and of which the isolated station at Hackgalla marks the northern limit, is called Horton's Plain, in honour of its discoverer Lord Horton. The larger part of it is still covered with primaeval forest, alternating with dry or marshy meadows known as *Patenas*. Leopards, bears, and wild elephants are the sovereigns of this domain. The undulating surface of the plateau is intersected by numerous streams between which the ground forms low hills, with here and there a loftier peak rising to seven or eight thousand feet above the sea. The southern edge ends almost everywhere in a steep cliff, and the wildest portion of the precipice is known by the characteristic name of The World's End. The rocky wall here falls abruptly—looking quite perpendicular—for about five thousand feet; and from the top the view is grand, over the rich forests of the southern lowlands, which spread for miles at its foot. This wonderful place is said to be the wildest part of the island, and is rarely visited by Europeans.

Not far from this romantic spot, in the heart of the wilderness, stands an uninhabited hut, built with thick stone walls, which was erected by the government as a refuge for officials who might be obliged to travel hither—Horton's Plain rest-house. Dr. Trimen and I proposed to spend a week here, making excursions into the neighbouring wilderness, which had never yet been visited. All our preparations were complete, the key of the rest-house and a government permit were in our hands, and we

set out from Hackgalla full of expectation, and in the best of humours, early on the 20th of February.

As we were obliged to take with us not only provisions for a week, but bedding, blankets, tents, arms, etc., as well as a quantity of paraphernalia and tins for collecting plants and animals, we were forced to have a train of twenty coolies to carry all this baggage. Besides these we each had a body servant; and Dr. Trimen had brought several men from Peradenia to collect and preserve plants. These were Cinghalese, the others were mostly Malabars or Tamil coolies. With a cook and a guide, our party numbered in all no less than thirty souls.

As is always the case in India when so large a troop is to be put in motion, it took some hours to get everything into order. Although we were to have been ready and off before sunrise, first one thing was missing and then another. When at last thirty people were got together and ready to start, and we were on the point of marching, the "hen coolie," who carried a large basket with a dozen or two of fowls in it, stumbled and fell, and some of the birds escaped through a hole in the basket with a loud cackling. This was the signal for all the coolies at once to throw down their loads and rush with shouts and cries to join in chasing the fugitives. Hardly were these recaptured and safely imprisoned once more—hardly had we fairly set out, when a rice sack that had been too tightly filled burst, and shed its contents in a white stream on the ground. Once more the procession halted, and every one set to work to shovel up the rice; some of the fowls took advantage of the pause to squeeze through a newly discovered hole in the basket and assist in picking up the rice, but for their own immediate benefit.

The noisy chase now began all over again, and another half hour was wasted before we could once more set out. Such scenes constantly recurred throughout the day, so it was no wonder that it took us twelve hours to get over twenty miles from Hackgalla to the rest-house. It was most fortunate that we had the loveliest spring weather all the day through, for if it had rained heavily we should have been in an evil plight.

The lonely path, rarely trodden, along which we marched, cut sometimes through the thick primaeval forest and sometimes across the wide open patenas. These are sharply distinct. The tall, dry reed-like grasses, which are the principal growth on the patenas, grow so close together, and their rhizomes form such a compact and impenetrable flooring of roots, that they fairly defy all the giants of the forest in the

struggle for existence; and every germ which may attempt to grow from the myriad seeds which must fall among the grass is inevitably choked at once. One, and only one, tree occasionally triumphs in the fight, and solitary specimens are not unfrequently to be seen raising a tall trunk and a spreading dark-green crown of foliage above the patenas; this is the mountain myrtle (*Careya arborea*), with a poisonous pear-shaped fruit. Almost all the grasses afford but a wretched pasture for cattle; they are remarkable for their hard, dry, scabrous leaves, and angular stiff stems, some have, too, a distinctly aromatic smell. Some are true grasses (*Gramineae*), others *Cyperacae* and *Restiacae*.

The dense forest which breaks these patenas forming, as it were, large irregular islands in the vast sea of grass—as in the prairies of North America—have the gloomy and sinister aspect which characterises all these mountain forests, from Adam's Peak to Peduru (or Pedro Talla Galla). Although the trees are actually of many various genera and species, they have a singular monotony of physiognomy, and as they often fail to perfect their flowers and fruit, it is really very difficult to distinguish them. Their leaves are usually leathery, dark green or blackish above, and often lustrous; the undersides lighter, and greyish, silvery, or rusty red. Their trunks are large and gnarled, sometimes completely clothed in yellow mosses and lichens, and overgrown with masses of parasitic plants, among which orchids and leguminous plants are conspicuous for the gaudiness of their flowers.

Horton's Plain rest-house stands on the same level above the sea as the top of Adam's Peak—7200 feet; about a thousand feet above the *cirque* of Newera Ellia. The ascent lies principally within the second half of the way; the first half is up and down the gentle slopes of an undulating plain. About half way we came upon an empty bamboo hut, which had been erected some time before by a hunting party, and here we rested for an hour at midday. Excepting a few tumbling mountain streams, which we passed on tree-trunks thrown across them, the road offered no particular difficulties.

When we had got to the top of the plateau, after climbing to the top of a deep ravine, down which a fine cataract fell, we came upon the characteristic Nilloo scrub, the favourite haunt of the wild elephants. The large heaps of dung, some quite fresh, which we saw in every direction, and the trodden undergrowth, were ample evidence of the frequent visits of herds to this spot. As we might, in fact, come upon one at any moment, the whole troop of coolies got into a state of extreme excitement. The

foremost of them had gone on and divided into scattered parties of twos and threes; these now drew together again, and walked on in single file along the narrow path.

The Nilloo jungle, which I here saw more extensively distributed and developed than anywhere else, constitutes a very peculiar growth, and derives its name from various species of a genus of the Acanthaceae (*Strobilanthus*), all known to the natives as Nilloo. They are the favourite food of the elephant, and grow in thick sheaves with slender weak stems to a height of fifteen to twenty feet, with handsome spikes of flowers at the top. The finest of all, *Str. pulcherrimus*, is conspicuous by the splendid crimson red of its stem and flower bracts, and as these plants grow in dense masses, forming the whole underwood of the mountain forests, the effect under the level rays of the setting sun is indescribably gorgeous. The elephants steadily eat their way through this Nilloo scrub; one marching close at the heels of another. Every bush that is not devoured is trodden flat; and where a herd of twenty or thirty of these colossal beasts have marched in single file through the wood, an open road of some yards wide is left ready beaten, as good as heart can desire—in a wilderness. In fact, these elephant tracks were the only paths we used during the expeditions of the next few days, and by following them alone we made several very interesting excursions. To be sure these convenient paths are not devoid of danger; for if the intruder should suddenly meet a herd of elephants, escape would be impossible, and it is necessary to keep a bright look out.

The sun was set, and it was very dark by the time we emerged from the last patch of forest on to the open patena, within a mile of the longed-for rest-house. Fresh courage sprang up in the weary party, some of whom were indeed quite exhausted; and we still had a deep hollow to go down and up again, before we could reach the rest-house on the further side. A torrent foamed down the centre, which, for lack of a bridge had to be crossed on a tree-trunk. We were heartily glad when the whole troop had succeeded in getting safely over this dangerous bit in the darkness and we had reached our destination. A fire was soon kindled, the empty rooms made as comfortable as possible, and our curry and rice consumed with an appetite worthy of the day's toil. The temperature, which at noon had risen to 57° had now fallen to 10°, and we were very comfortable indoors by a good fire and wrapped in woollen rugs. Our coolies outside in the open verandah crept as close to a large fire as was possible without being roasted.

The weather continued fine during our stay at Horton's Plain, and favoured the interesting excursions which we made in various directions through this remote solitude. The fresh mountain air was wonderfully invigorating; but our miserable skin, which the equable moist heat of the lowlands had made very tender, suffered severely. On our hands and faces it cracked as it does with us in a severe winter; partly in consequence of the extreme drought of the rarer air, partly from the severe changes of temperature. At noon the thermometer would rise to 30° or 33° centigrade in the shade, while at midnight it fell to 4° or 5° C. In the early morning the patenas were white with frost, and a thick mist lay over hill and dale; but it soon rolled off, giving way to a brilliant blue sky and glorious sunshine. In the afternoon, heavy clouds usually gathered, but it did not rain; they packed into fantastic masses, which the setting sun painted with glory.

It was not the weather only which here, at the end of February reminded me of a fine late autumn in Europe; the whole mountain landscape, at the end of the dry season, had a marked autumnal aspect. The thick, coarse herbage of the patenas was parched and generally tawny yellow rather than green; indeed, wide patches of it were brown and black, and burnt to ashes. The Cinghalese mountain herdsmen, who come up here every year for a few months with their beasts, make a practice of setting these savannahs on fire at the end of the dry season, to improve the next crop of grass. Every evening we had the amusement of watching these extensive conflagrations, which spread to grand dimensions on the undulating slopes, or when they caught the dense woods which fringe the patenas. The writhing flames would creep in zig-zags, like a fiery snake up the hill-side; then suddenly rush across a level of dry grass and make a lake of fire, whose sinister glow was reflected from the dim background of forest and the heavy masses of cloud overhead. Then hundreds of little white wreaths of steam rose up from the plain, as if geysers were bursting from the mountain-flank, and the shower of bright sparks they carried up with them, dancing and flashing, completed the illusion.

Though not an evening passed without our seeing this spectacle of prairie fires, we never caught sight of the Cinghalese herdsmen who originated them; the absolute solitude of the spot was unbroken by a single human creature.

Our German poets are fond of seizing the charms of "Waldeinsamkeit"—the solitude of nature—and we indemnify ourselves by its

illusions for the numberless annoyances daily inflicted on us by the complications of civilized life. But what is our sophisticated "Waldeinsamkeit"—with a village a few miles away, at the best—to the real and immeasurable solitude which reigns in this primaeval wilderness of the Cinghalese highlands? Here, indeed, we are sure of being alone with inviolate nature. I never shall forget the delicious stillness of the days I spent in the sombre woods and sunny savannahs at the World's End. As my friend, Dr. Trimen, was busy with his own botanical work and went his own way, I generally wandered alone through this solitary wilderness, or accompanied only by a taciturn Tamil, who carried my gun and painting materials.

The sense of utter loneliness which pervades these wilds is greatly heightened by the fact, that the animals which inhabit them show scarcely any outward signs of life. The wild elephant is, no doubt, to this day the monarch of the forest, but once only did I ever see any; and the great Russa-deer, or elk (*Russa Aristotelis*), which is said not to be uncommon, and of which I often heard reports, I never saw at all. These and most other natives of the forest are, in fact, chiefly or exclusively nocturnal in their habits, and during the day remain hidden in the deep cool coverts. Even the great grey ape (*Presbytis ursinus*), which is very common here, I but rarely saw, though I often heard its gruff tones early in the morning.

The melancholy cries of some birds, particularly the green wood pigeons and bee-eaters, are rarely heard excepting in the early dawn; at a later hour the gaudy jungle cock (*Gallus Lafayetti*) is the only bird that breaks the silence. This gorgeous species appears to be nearly allied to the first parent of our domestic fowl. The cock is conspicuous for his gay and brilliant plumage, fine orange brown ruff, and green sickle tail-feathers; while the hen is dressed in modest greyish brown. The sonorous call of this wild fowl, which is fuller and more tuneful than the crow of his farm-yard cousin, is often heard for hours in the wood, now near, now distant; for the rival cocks compete zealously in this vocal entertainment for the favour of the critical hens. I could, however, rarely get within shot for they are so shy and cautious that the slightest rustle interrupts the performance, and when once I had fired a shot the forest was silent for a long time after.

I often sat painting for hours on some fallen tree-trunk without hearing a sound. Insects are as poorly represented as birds, and excepting ants, they are singularly scarce; butterflies and beetles occur in small

variety and are for the most part inconspicuous. The murmuring hum of a cloud of small flies, with the accompanying murmur of a forest rivulet, or the soft rustle of the wind in the branches, is often the only sound that defies the deep silence of the Spirit of the mountain.

This adds to the weird impression produced by the fantastical forms of the trees of the primaeval forest, the gnarled and tangled growth of their trunks and the forked boughs, bearded with yard-long growths of orange mosses and lichens, and robed with rich green mantles of creepers. The lower part of the tree is often wreathed with the white or strangely coloured flowers of fragrant epiphytal orchids, while their dark green crowns are gay with the blossoms of parasitic plants of various species. A highly characteristic ornament of these woods is the elegant climbing bamboo (*Arundinaria debilis*). Its slender grassy stems creep up the tallest trees, and hang down from the branches in long straight chains, elegantly ornamented with coronas of light green leaves. But here, and everywhere else in the hill country, the most decorative plant is the magnificent *Rhododendron arboreum*, with its great branches of bright red blossoms. Next to this, the most remarkable trees of these forests are species of laurel and myrtle, especially *Eugenia*, and some kinds of *Rubiaceae* and *Ternstraemiae*. We miss all the forms common in our European woods, and especially firs; this important family is entirely absent from Ceylon.

The finest mountain panorama which we saw in the cruise of our expeditions about Horton's Plain, was from the summit of Totapella which we ascended on February the 22nd, in the most glorious weather. This peak is 7800 feet above the sea level, and near the eastern limit of the plateau. From the top, which is little wooded and overgrown with the fine red-flowered *Osbeckia buxifolia*, there is an extensive view on every side: northwards, to the heights of Newera Ellia, Peduru, and Hackgalla; eastwards, over the hill country of Badoola and the peak of Namoona; southwards, past the boundary cliffs of the World's End; and westwards, to Adam's Peak. The way up to the summit would have been in many places impenetrable, but for the elephant-tracks that we followed; where these were wanting, the coolies had to cut a path through the thick and tangled brushwood.

On the 24th, we made our way to the spot itself, known as the World's End; a famous, but rarely visited ravine, where the southern edge of the great tableland is cut off in a perpendicular wall five thousand feet high. The stupendous effect of this sudden fall is all the more startling,

because the wanderer comes upon it after walking for a couple of hours through the forest, emerging immediately at the top of the yawning gulf at his feet. The rivers far below wind like silver threads through the velvet verdure of the plain, and here and there, by the aid of a telescope, a bungalow can be discovered in its plantation. Waterfalls tumble from the top of the ravine, which is overgrown with fine tree-ferns, and, like the Staubbach at Lauterbrunnen, vanish in mist before they reach the bottom.

It was in this spot, the wildest and most unfrequented perhaps in all Ceylon, that, for the first and only time, I saw wild elephants in a state of nature, though I had already seen them as prisoners in the Corral, at the elephant hunt of Lambugana. My attention was first attracted by the crackle of breaking boughs in the heart of the underwood, at about fifty or sixty feet below the projecting rock on which I was standing. By watching carefully I could make out among the swaying greenery of the jungle a herd of ten or twelve elephants, taking their breakfast very much at their ease. There was little to be seen of them but the top of their heads and their trunks, with which they bent down and broke off the branches. After enjoying this unwonted sight for some time, and feeling secure in my elevated ambush, I fired off both the barrels of my rifle at the nearest of the elephants, but of course without wounding him, as my gun was only loaded with small shot. I was answered by the loud trumpeting, which is always the note of alarm when elephants are surprised; then there was a loud crash through the thicket, which the huge brutes trod down like reeds, and in a few minutes the herd had disappeared round an angle of the cliff.

From the World's End, which was also the end of our interesting expedition, we went down by a steep and winding path through the loveliest wooded gorges—a walk of five hours—to Nonpareil, the first coffee plantation that we met with on descending from the mountain wilderness. It belongs to Captain Bayley, the same enterprising man whose pretty marine villa I had previously admired at Galle. I was most kindly received by his son, who acts as his head-bailiff. It had been our intention to go on the same afternoon to Billahooloya, the highest village in the valley; but when we proposed to start at four o'clock, after an excellent dinner, such a tremendous storm came on that we were glad to accept our kind host's pressing invitation to remain for the night.

The rain ceased at about five, and the evening was lovely. We went over the fine plantation, a model of arrangement and care, and took a

walk in the beautiful dells. Hundreds of tiny cataracts, caused by the brief but violent rainfall, danced down the cliffs on every side. The wonderful vegetation which fills these narrow rifts glittered and shone; the creepers, which hung in garlands from tree to tree, once more excited our astonishment and delight, and nimble monkeys performed gymnastics along them. Here, again, we admired the tree-ferns (*Alsophila*) the palms of the mountain ravines. Their circular crown of feathery fronds cast a beautiful green shade over the foaming brooks, and their tender black stems rose to twenty or thirty feet above the rocky channels; indeed, a few exceptionally fine specimens had here attained the unusual height of forty-five or fifty feet. It was the last opportunity I had of seeing such splendid tree-ferns, for lower down the mountains they were much smaller and more insignificant, and as we got down to the plain they disappeared altogether.

CHAPTER XIX

THE BLACK RIVER

I took leave for ever of the hill country of Ceylon at the World's End, and, full of the delightful impressions of my mountain excursion, on the 25th of February I went down from Nonpareil to Billahooloya, the first village in the valley. It is the highest station on the great high road which leads from Badoola and the south-eastern coffee district westwards to Ratnapoora. The road is always crowded with strings of bullock-carts, carrying the coffee bags to the town, or returning with necessaries for the resident planters. The great Black River, or Kalu Ganga, begins to be navigable at Ratnapoora, and here the coffee is shipped into large canoes, which convey it down the river to the mouth, at Caltura, whence it is carried by railway to Colombo. Dr. Trimen and I had decided to avail ourselves of the same route for our return journey to Colombo, for it was as new to him as to me: starting from Billahooloya in bullock-carts, taking a boat at Ratnapoora, and proceeding by train to Colombo. The whole journey well repaid us—the two interesting days in the bullock-cart, no less than the delightful passage down the river, afforded a series of delightful pictures, and proved a worthy sequel to our successful mountain trip.

The little village of Billahooloya, literally the Sacrificial Torch-brook, derives its name from the mountain torrent which here falls in rushing cataracts through a fine gorge in the southern rampart of the plateau, and which is fed by a small rivulet which rises at the World's End, besides several tributary streams. The narrow channels of these

tumbling brooks are shrouded in luxuriant verdure, and enclosed between steep rocky walls, all opening westwards, and these ravines give the scenery a very grand and imposing aspect. As we came down from Nonpareil, the beauty of the country charmed us so much that we decided on spending a few days at the village. The rest-house is delightfully situated, under the shade of a mighty tamarind tree, close to a stone bridge which spans the torrent; the background is formed by the vast amphitheatre of the cliffs of the World's End. The accommodation in the rest-house was under the circumstances, really very good, at any rate we found it so after our experience in the stone hut on Horton's Plain. We here dismissed our train of coolies, retaining only a couple of servants to accompany us to Caltura. The coolies returned direct to Kandy and Newera Ellia over Adam's Peak.

While Dr. Trimen investigated the rich flora of the neighbourhood, and was rewarded by the discovery of some remarkable new species, I made some interesting excursions into the valleys, and added several sketches to my book. But, again, my only regret was that I had not weeks instead of days at my disposal. The tropical vegetation, to whose wonders I had now been accustomed for more than three months, seemed to have reached its richest development here, at the southern part of the central plateau. The intense heat of the tropical sun here exercises its utmost influence, while at the same time the amount of atmospheric precipitation against the mighty wall of rock is excessively great; and the combination of a very high temperature and great moisture results in a lavish growth of tropical plants, which is unsurpassed, perhaps, in any other spot on earth. As I wandered for miles up the streams, and scrambled through the steep rocky gullies, I came upon marvels of the Ceylon flora, which transcended everything I had previously seen.

The parasites and climbers excited, my utmost astonishment. Stems more than a foot thick, twined like cork-screws round the cylindrical trunks of other giants of the forest, a hundred feet in height, just as with us the frail clematis or wild vine wind their thin clinging stems round some tall beech or fir tree. Green mantling hung from the tall heads of the *Dilleniae* or *Terminalia*, a closely woven tissue of interlacing lianas; and the gold coloured blossoms mingled with the leaves of the tree in such quantity that they might be supposed to be the flower of the host rather than of the parasite. Certainly the most splendid of these epiphytes is the famous "Maha-Rus-Wael," *Entada pursaetha*; its ripe seed-pods—

it is a leguminous plant—are at least five feet long and six inches broad, and contain brown beans, or nuts, so large that the Cinghalese hollow them out and use them to drink out of.

Not less lovely than this jungle growth, with its numerous parasites, is the lowlier flora which clothes the rocks in and by the rushing waters. Here we find ferns with graceful plumes, from ten to twelve feet in length; balsams, aroids, and *Marantas* with their splendid flowers. A peculiar ornament of these streams is a low-growing species of *Pandanus* (*P. humilis ?*), which looks like a dwarf palm, and grows abundantly among the boulders in the torrent. The creepers which entangle the brushwood that fringes the bank form so dense a mass that it is impossible to walk anywhere but in the bed of the stream itself. The water was often up to my waist, but with a temperature of 25° to 30° C. this bath was only pleasant and refreshing.

My visit to the main stream of this valley, which is one of the principal feeders of the Black River, was beset with unusual difficulties. This rivulet has at Billahooloya already received the waters of several smaller ones, and was so swollen in consequence of the heavy rainfall of the previous days in the hill districts that it was one chain of foaming cataracts, which rolled and tumbled with a loud roar over the large blocks of granite that fill its bed. It was quite out of the question that I should attempt to ascend it by walking in the channel, and I was obliged to avail myself of the bridges, formed of a single bare trunk, which are laid at intervals from one bank to the other. I shudder now as I recall one of these bridges, spanning a noisy waterfall at about a mile below Billahooloya. It was late in the evening when, on my return from a long expedition, I was forced to cross it, high above the water, in order to reach the other shore before it should be quite dark. When I had got about half-way across over the whirling torrent, the trunk, on which I was slowly and cautiously balancing myself, and which was not very thick, began to sway so greatly that I thought it would be wise to forego my upright posture. I stooped slowly down and achieved the rest of my transit astride on the pole; and I may confess to a sigh of relief when, by an effort of gymnastics, I found myself safe on the further bank. Even then I had the pleasure of wading for half an hour in the dark across the inundated rice-fields.

When I at last reached the rest-house, half covered with mud, the long streaks of blood on my trousers showed where the horrible leeches had made me their prey. I picked several dozen off my legs. This

intolerable plague—from which the hill country is happily free—began at once to torment us as soon as we came down into the damp low-lands; in few spots in Ceylon did I suffer so severely from the land-leeches as in the lovely woods and ravines of Billahooloya.

The drive in bullock-carts from Billahooloya to Ratnapoora takes two long days, and as the beasts must rest for some hours during the hot midday hours, we started at four o'clock in the morning. The pleasant freshness of the pure night air and the extraordinary brilliancy of the stars in the deep sky were something quite marvellous in these high valleys, and we walked by the side of the meditative beasts as they slowly paced along dragging our two-wheeled vehicle for some hours before the heat of the sun was so great as to force us to take shelter under the awning. This tilt or roof, made of palm-leaf matting, would have covered six or eight persons, and we could stretch ourselves out comfortably under it on mats, though the jolting of the springless cart was fatiguing after any length of time.

The scenery is beautiful all the way. The road for a long time follows the line of the southern slope of the highlands, the mighty rampart of cliff towering far above the lower outlying range of wooded hills. The fertile plain widens gradually as we descend, and is cultivated with fields of rice, maize, cassava, bananas, and other produce. Pretty clumps of forest, with here and there a village or a waterfall in the ever-widening river, give variety to the pleasing panorama; parrots and monkeys in the groves, buffaloes and herons in the water-meadows, wag-tails and waders in the streams, lend it animation and interest. The road, too, is full and busy with natives and bullock-carts.

After a hot drive of eight hours we rested the first day at Madoola, a little village very picturesquely placed in a narrow wooded valley. I at once proceeded to refresh myself by a bath in the mountain stream, and my enjoyment of it was resented by no one but some swarms of little fishes (*Cyprinodonta ?*), which came round me in hundreds to attack their unusual visitor; I unfortunately could not succeed in catching one of my slippery little assailants, though they shot forth from their hiding-places among the rocks and boldly tried to nibble with their tiny mouths. After dinner, I made my way for some distance up the stony bed of the river whose rocky banks were overgrown with beautiful trees and fantastically decorated with creepers. Thick runners of wild vine (*Vitis indica*) hung in festoons like natural ropes across from one bank to the other; and it was a most amusing scene when a party of monkeys, that I startled

fled across this natural bridge with extraordinary rapidity and dexterity, screaming as they went. I made my way through the foaming waters and over the slippery rocks a little farther up, to where a few enormous trees (*Terminalia?*) stood up like columns garlanded and wreathed with climbers. While I sat making a sketch of the wild scene, the clouds gathered and a heavy storm broke. The vivid lightning lighted up the darkened ravine, flash after flash, and the tremendous echo of the thunder rolled all round me so like a terrific cannonade that I could almost fancy I saw the cliffs tremble. The downpour that followed was so violent that the water came tumbling down every crevice in the rocks, and I expected to see all my painting materials soaked through. But the ancestral fig tree, under whose protecting roof I had sought shelter, was so densely covered with leaves that only a few drops trickled through now and then, and I was able to finish my sketch.

The rain lasted about an hour, and when it ceased and I was able to scramble down to the rest-house again, I was very near capturing a noble trophy in the form of a fine snake, about six feet long, which glided down from an overhanging bough; but it writhed away so quickly among the heaps of fallen leaves that I had not time to make an end of it with my hunting-knife. However, I made a prize of several gigantic thorny spiders (*Acrosoma?*), a span across with their thin, long hairy legs. I also shot a few pretty green parrots, as a flock of them flew above me screaming loudly.

The early evening, when the victorious sun decked the freshly washed valley with myriads of sparkling diamonds, was wonderfully lovely. Later, however, the rain began again, and forced us to ride in the covered cart. We met numbers of Cinghalese, marching on with stoical indifference, undaunted by the pouring rain, only holding a *caladium* leaf over their heads to protect their precious top-knot and comb from the wet. It was not till late in the evening that we reached Palamadula, a large village beautifully situated, where we passed the night.

After Palamadula the country was more open and level. The great rocky hills of the central range fell into the background, and the lower slopes gained in importance. Adam's Peak was still conspicuous among the remote mountains, though its southern aspect is far less imposing than the northern and eastern. The vegetation gradually assumed the character which marks it throughout the southern plains; and we were particularly charmed to find ourselves once more among the noble palms, which are entirely absent from the hill districts.

By starting from Palamadula very early in the morning of February 28th, we reached Ratnapoora by noon, in time to devote several hours to seeing the place and the immediate neighbourhood. This is very pretty; the valley, which here expands to a wide basin enclosed by high hills, is well cultivated and richly fertile. The town itself, on the contrary, offers little interest, and if the traveller has anticipated any special splendour from its high-sounding name, "the city of rubies," he is doomed to keen disappointment. The name was given to it by reason of the abundance of precious stones, for which the neighbourhood was famous some centuries ago; they are found in the detritus, in the rivers and brooks, and in the peaty soil of the valley. To this day there are some famous gem mines, but their productiveness is much less than it was formerly. In the town itself there are many stalls where precious stones are sold, and a great many Moormen made a business of cutting and polishing them. But of late the importation of imitation gems has increased largely, and it seems certain that here in Ratnapoora, as well as at Colombo and Galle, many more artificial stones—cut glass of European manufacture—are sold than genuine stones found on the spot. The art of imitation is now so well understood, that even mineralogists and jewellers by profession are often unable to discriminate the true from the false without a close chemical examination.

In the heart of Ratnapoora, and on the right and northern bank of the Kalu Ganga a charming tank stands under a fine old tamarind tree. On a hill to the eastward stands the old Dutch fort; its rambling buildings are now used as the head-quarters of the district law courts and government officials. At the foot of the hill is the bazaar, a long, double row of low huts and stalls, where the principal wares consist of food, spices, and household chattels, with gems as before mentioned. These, with sundry scattered groups of huts along the river shore, and a number of pretty bungalows belonging to the English residents, surrounded by gardens and placed here and there in the park-like valley, constitute what is known as the "city of rubies."

On the 1st of March we left Ratnapoora to descend the Black River, which is navigable from this point. This, next to the Mahawelli Ganga, is the longest, widest, and finest river in Ceylon, though the Kalany Ganga at Colombo is little inferior to it. Close to the rest-house is the harbour, as it is called, the reach whence all vessels start, and where a crowd of barks lie at anchor. Most of these are coffee boats, to carry the produce of the eastern districts down to Caltura. They return empty,

or very lightly loaded with imported goods, for the passage up the river is long and toilsome. They are either double canoes firmly bound together by an upper-deck of beams and planks, or they are floored over with a broad flat boarding, with no keel. The fore and after ends are exactly alike. They are always sheltered by a strong watertight awning of palm or pandanus-leaf mats, stretched on bamboo hoops. The spacious saloon under this roof, which is open fore and aft, is so large that in the smaller boats eight or ten people can be comfortably at home, and in the larger ones twenty or thirty. In the large boats the space is frequently divided into cabins by hangings of matting. We hired a small double canoe and four rowers.

When the river is full and the weather favourable, the whole passage down the Black River, from Ratnapoora to Caltura, can be made in a day, but when the river is low or the weather bad, it takes from two to four days. The heavy rains of the last few days had filled all its affluents so rapidly that we had the advantage of a very full flood, and made the little voyage in eighteen hours without any stoppage, starting from Ratnapoora at six in the morning, and reaching Caltura at midnight.

I afterwards greatly regretted this hurry, for the scenery is, from first to last, so beautiful that I could gladly have spent twice or three times as long on the way.

Lovely weather favoured us throughout, and I can never forget the succession of enchanting views which passed before my eyes as if in a magic lantern. I and my friend lay very much at our ease in the fore part of the boat on a palm-mat, sheltered from the sun by the projecting roof, while our servants and boatmen occupied the middle and stern. There our simple meals were prepared, consisting of tea, rice, and curry, bananas and cocoa-nuts, and, as an extra treat, a few pots of jam and some tablets of chocolate, which we had reserved till the last.

The sombre masses of overhanging dark green trees, and the black colour given by the fringing thicket to the water near the banks, have given its name to the Kalu Ganga, or Black River. The water itself, when the river is low, is a dark blackish green, but when it is full the colour is yellowish or orange-brown, in consequence of the quantities of yellow or reddish loam brought down by the rains. On the shore itself abrupt rocks and grotesque groups of stones, overhanging boughs, and trees torn up by the roots, supply a varied and delightful foreground to the landscape. The distance is filled up by the sublime outlines of the mountains, swathed in blue mist and appearing much higher than they really are.

The chief part of the river's edge looks as if it consisted entirely of vegetation. *Aralia* and *Terminalia*, *Dillenia* and *Bombax*, *Rubiaceae* and *Urticaceae* predominate. The dark green of this thicket is pleasingly varied by the bright green of the bamboos; their orange-yellow canes stand in thick clumps from forty to fifty feet high, and the elegant feathery leaves hang over the water like tufts of ostrich plumes. Cocoa and areca palms, talipot and kittool, with here and there a plantation of banana and cassava, betray the existence of inhabitants, and prove that the shores of the river are not such a wilderness as might be supposed from the thicket that fringes its bank. Occasionally, though more rarely, solitary native huts stand on a rocky promontory of the shore, and more rarely still the white cupola of a dagoba reveals the existence of a village.

Animal life contributes largely to diversify the charms of the landscape. Near the huts the tame black swine wander about the shore, grubbing among the roots of the trees. Large black buffaloes roll in the sand banks or in the mud at the bottom, where the water is shallow, having only their heads above the surface. Where there is any considerable extent of wooded country large parties of black monkeys display their amusing gymnastics, and shriek as they spring from tree to tree. Here and there stands a gigantic and ancient fig-tree, thickly populated with flying-foxes, hanging to every branch. Brilliant blue and green kingfishers perch on the boughs that overhang the stream, and dart down on the unwary fish; curlews, herons, water-rails, and other waders fish in the shallows and stalk over the sand-banks, and the tree-tops are full of lively flocks of red and green parrots. Now and then we have a glimpse of the Ceylon bird of paradise, with its two long white tail-feathers. Crocodiles used to be common in the Black River, but the constantly increasing traffic has led to their being almost exterminated. In their place the great green iguana—the cabra-goya—suns itself on the rocks in mid-current. Large river tortoises, too, which lay their eggs in the sand banks, were frequently to be seen. The water is too turbid and dark for fishes to be easily detected, though fish of the shad and carp tribes (*Siluridae* and *Cyprinidae*) are said to be abundant, and here and there a solitary native sits on the bank fishing with a line or hand-net. The most remarkable among the insects are handsome large butterflies and fine metallic *demoiselles* or dragon-flies. The gnats and mosquitos, which at some seasons are a perfect plague, were at the time of our excursion quite endurable.

The most exciting episode of our delightful voyage was the shooting of the rapids, which lie about half-way between Ratnapoora and

Caltura, and are very much dreaded, being, in fact, a dangerous impediment in the navigation of the Kalu Ganga. The waters here force their way through a series of rocky barriers which lie across their channel; the banks are higher and closer together, and the river, thus hemmed in, tumbles and roars among the rocks; the fall is very considerable within a short distance. At the most dangerous spot our boat was completely unloaded, and everything carried for some distance by land; we ourselves scrambled down the large shelves of granite to the bottom of the falls. A number of natives are always here on the look-out for boats, which, when they are empty, are hauled and lifted up or down the foaming rapids. Half a dozen of these men—among them a Tamil, more than six feet in height, and a perfect Hercules in build—plunged into the water and contrived to twist and guide the canoe through the narrow straits, shouting loudly all the time, so cleverly that it shot down the rapids without being damaged against the sharp rocks.

A few miles below these falls the river widens considerably, and we gradually find ourselves carried down to the level plain of the western coast. The fall to the sea is there very inconsiderable, and the boat's crew hoisted a large square sail that the light evening breeze might help them in their toil. Soon after dark the rising moon, nearly full, threw its soft radiance across the wide level of water or cast dancing lights through the boughs overhead. The Black River near its *debouchure* appears to be about as wide as the Rhine at Cologne. No sound broke the silence but the bell-like croak of the tree-frogs and the even measure of the oars, or now and again the dismal hoot of an owl and the gruff voice of a monkey. All nature seemed to sleep when we disembarked at Caltura, soon after midnight.

CHAPTER XX

HOME THROUGH EGYPT

THE delightful excursion in the hill country, ending in the voyage down the Black River, had closed the programme of all I had most wished to do in this Isle of Marvels, and now I had to prepare for my return journey. I should, it is true, have liked to see Trincomalie, which, besides its great interest, is so rich in the eyes of the naturalist; and to visit the famous ruined cities in the north of the island, Anarajapoora and Pollanarua. But my six months' leave was drawing to an end; the last Lloyd's steamer that could transport me back to Europe in due time would sail from Colombo on the 11th of March, and I cannot deny that, in spite of all the wonders and beauties I had seen, home sickness made itself increasingly felt, and a happy return to my beloved German home seemed, more and more, the most desirable thing on earth.

So as soon as I reached Colombo I set to work to pack all my latest additions to my collection and make my preparations for starting. I made one more delightful excursion with Dr. Trimen, to Henerakgodde, an offshoot of the garden at Peradenia, in the very hottest part of the damp low country, and intended for the cultivation of such plants as require the highest tropical temperature. There I saw gigantic specimens of the finest trees, palms, creepers, ferns and orchids, which, even after all I had seen already, utterly astounded me. I spent a few very pleasant days with Mr. Staniforth Green and his nephew at "Templetree Bungalow," and remember with peculiar pleasure a delightful evening spent in a canoe with the latter, on the mirror-like lake by the Cinnamon Gardens.

I devoted a few most interesting days to a study of the museum, and Dr. Haly, the director, having then returned, displayed and explained its contents in the kindest and most instructive manner. I paid farewell calls to the many English residents who had aided me in various ways during my stay in the island. On the very last day, Mr. William Fergusson enriched my collection by the addition of a fine and exceptionally large tiger-frog (*Rana tigrina*), and other amphibia; and my friend Both crowned his zoological favours with a full-grown "Negumbo devil"—a large scale-covered quadruped, held in superstitious dread by the Cinghalese, and the sole representative of the Edentata found in the island (*Manis brachyura*). It was not an easy task to kill this creature, which proved highly tenacious of life. A large dose of prussic acid finally put an end to him.

Every moment I could spare from the great business of packing I devoted to the garden of "Whist Bungalow," and I took several photographs of the most beautiful points. It was a real grief to take leave of this delightful paradise, and of my worthy fellow-countrymen whose hospitality I had enjoyed; I felt acutely the overwhelming sense of quitting for ever a spot of earth that had grown dear to me. Of course this feeling was greatly counteracted by the prospect of finding myself homeward-bound, for in the tropics *Home* has to every European quite a different sound to what it ever can have in Europe itself. The feeling of returning to the home we love after a successful journey in the tropics can only be compared with that of the soldier returning after a victorious campaign. I, indeed, had enjoyed special good fortune, for during a stay of five months in the tropics, in spite of toil and fatigue, I had not had a single day's illness, and had happily escaped every form of danger.

However, this good fortune and immunity had their limits, and I had an instinctive sense of having nearly reached them. All the wonderful and magnificent impressions and experience I had gone through during the last four months had been almost too much for me, and I longed unspeakably for respite and repose. During the last week in Colombo, especially when the oppressive effects of the change of monsoon were very sensible, I felt more exhausted and over-wrought than I ever had before. I positively craved at last for the quiet time before me on board the steam vessel, and for some leisure which should allow of my mastering and classifying the mass of pictures and ideas that filled my brain.

This longed-for respite and Sunday mood I found on board the fine vessel in which I returned from Colombo. I have never had a better voyage than in the good ship *Aglaia*, belonging to the Austrian Lloyd's Company, which transported me in eight days from Ceylon to Egypt. She had started from Calcutta so heavily freighted as to draw her utmost allowance of water, and my cases, for want of room, were stowed in the smoking-room. Even in a storm she could hardly have rolled much, and under the calm and cloudless sky which favoured us throughout the voyage the ship's motion was hardly perceptible; the north-east monsoon was behind us, and the passage across the Indian Ocean from Colombo to Aden was like a holiday trip across some calm and land-locked lake.

This pleasant state of things was enhanced by the agreeable society of my fellow-travellers. There were but three first-class passengers besides myself, all three Germans returning home from Calcutta, whom I found excellent company. The captain, Herr N., was the most amiable ship's captain I ever met with; a sage and humorist to boot, combining the philosophy of Socrates and the Aretshi. The fair sex were altogether absent, which added in no small degree to the pleasures of the voyage. Pardon, fair reader, so shocking a declaration. We four passengers and the friendly ship's officers, with whom we took our meals, enjoyed to the utmost the various privileges which the absence of ladies secured to us, and, for one thing, never appeared throughout the passage in any costume but the most comfortable Indian *neglige*. Neither handkerchief nor collar encumbered our throats, easy yellow Indian slippers took the place of shining black boots, and the rest of our attire consisted of that particularly light and airy white flannel garment known throughout India as a pajama suit.

The nights during this voyage were wonderfully beautiful. We often slept on the deck, fanned by a soft tropical sea breeze, under the dark blue roof of sky, where the stars shone with intense brightness. I often lay awake for hours inhaling the fresh salt air with delight, and enjoying the heavenly peace which for eighteen days still to come would be disturbed by neither letters nor proof-sheets, by neither students nor college-beadle. I nightly admired the "mild splendour of the southern cross," as in duty bound, and often gazed into the sparkling wake that spread like a long fiery tail at the stern of the ship, flashing with myriads of luminous *Medusae*, *Crustaceae*, *Salpae*, and other phosphorescent creatures.

I spent the days chiefly in arranging and completing my notes and sketches, and when I was tired of writing, drawing, or reading, I wandered into the second-class quarters, where a menagerie of monkeys, parrots, wood pigeons and other birds were a never-ending entertainment. In my own little menagerie the most interesting creature was the lemur from Belligam (*Stenops gracilis*), a most amusing little fellow, whose wonderful gymnastics delighted us every evening.

The details of the voyage afforded little worthy of record. I quitted my friends at "Whist Bungalow" at two o'clock on the 10th of March, after a regretful leave-taking. On the 12th we passed the Maldives, steering pretty close to the cocoa-nut groves of Minikoi, a coral island. On the morning of the 18th we were near the picturesque coast of Socotra, where the ravines are marked by immense fields of snow-white sand, looking like glaciers sloping to the sea. We reached Aden on the evening of the 20th, but as we were refused pratique in consequence of the quarantine against cholera, we steamed out again at nine o'clock and up the Red Sea. On the 21st we passed Bab-el-Mandeb, and on the 22nd the Guano rock of Geb-el-Tebir; immense flocks of dusky cormorants here flew round the ship. On the morning of the 25th we crossed the tropic of Cancer, just opposite Cape Berenice; coasted the Sinaitic Peninsula on the 27th; and anchored before sunrise on the 28th by the quay at Suez.

As I still had a few weeks of liberty at my disposal, and as many vessels sail weekly from Alexandria for various ports in Europe, I determined to spend a fortnight in Egypt, chiefly in order to avoid the sudden change of climate, which at this season of the year would be very severe, in going at once from the heat of Ceylon to the cold of Northern Europe. I was also greatly influenced by a wish to compare the vegetation of Lower Egypt, which had impressed me greatly nine years previously, with my Indian experiences. The comparison proved, in fact, extremely interesting; there can hardly be a greater contrast in every respect between two countries, both in the torrid zone, than between Ceylon and Egypt.

On the morning of the 28th of March I quitted the *Aglaia*, bidding a cordial farewell to my fellow-passengers, and on the following day I made an excursion on a donkey to Moses' Well, as it is called, an interesting little oasis in the desert, a few miles east of the entrance to the Canal. On the 30th, a nine hours' railway journey took me to Cairo, where I took up my abode in the German Hotel du Nil. I spent ten days in

Cairo, that embodiment of the Arabian Nights, partly in refreshing my pleasant memories of a former visit and partly in making new excursions. The most interesting of these was a somewhat long ride into the desert, to what is known as "The Great Petrified Forest." Under the guidance of an experienced fellow-countryman, who has long been resident in Cairo as an apothecary—my kind friend Sickenberger—I set out with a numerous party of German travellers at six in the morning of April 5th. We had taken care to provide ourselves with food and with strong asses, as the ride thither and back again takes the whole day. The road lay eastward, first through the wonderful plain of the tombs of the Khalifs, and then up the northern slope of Mokattam. After trotting through the sandy wilderness for four hours we reached our destination. Here, in the midst of an absolutely barren wilderness, petrified among the sandhills, are a considerable number of tree-trunks from seventy to eighty feet long and two or three feet thick. They belong chiefly to an extinct genus of *Sterculiae*, *Nicolia*. Most of these trunks are of a shining blackish or reddish brown, and look as if they had been polished; they are broken into fragments from two to six feet in length, and half buried in the sand; some, however, lie quite free from sand and in order, end to end. They are most numerous near the coal shaft, "Bir-el-Fahme," a boring six hundred feet deep, made in 1840, by command of Mohammed Ali, who vainly hoped to find coal in the midst of the desert.

Our road back to Cairo led us through Wadi Dugla, a wide and picturesque gorge, through which the caravans of Mecca pilgrims make their way from Cairo to Suez. We rode for several hours downhill through the windings of this ravine, where the bare yellowish cliffs rise almost perpendicularly on either side, before we finally issued on the Nile valley at a spot between Wadi Turra on the north and the heights of Mokattam on the south. It was late in the evening before we reached Cairo.

This desert ride, which affords a very fair idea of the general character of the Arabian deserts, gave me a vivid conception of the extraordinary difference between the whole aspect of nature in Lower Egypt and in Ceylon. This contrast is shown in the first place by the climate and vegetation, and in the second by every detail of animal and human life. While the ancient sea bottom, which now constitutes the yellow sands of Egypt, is rich in fossil remains which betray its relatively recent geological origin, the soil of verdurous Ceylon consists of primitive rock absolutely destitute of fossils. While here the intense drought of the