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Sometimes referred to as 'the grand old man of science', Alfred Russel Wallace (1823–1913) was a naturalist, evolutionary theorist, and friend of Charles Darwin. In this study of tropical flora and fauna, he takes the reader on a tour of the equatorial forest belt – the almost continuous band of forest that stretches around the world between the tropics. There, chameleon-like caterpillars alter the colours of their cocoons, parasitical trees override their hosts with spectacular aerial root systems, and some of the most pressing questions of Victorian evolutionary science arise: how do animals and plants come to be brightly coloured? Can their adaptations provide clues about past geological eras? And was Darwin wholly correct in his theory of sexual selection? First published in 1878, Wallace's book is a skilfully written reflection of contemporary naturalism, still highly readable and relevant to students in the history of science.

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# TROPICAL NATURE,

AND

## OTHER ESSAYS.

BY

ALFRED R. WALLACE.

AUTHOR OF "THE MALAY ARCHIPELAGO," "THE GEOGRAPHICAL DISTRIBUTION OF ANIMALS,"  
"CONTRIBUTIONS TO THE THEORY OF NATURAL SELECTION," ETC., ETC.

London:  
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LONDON :  
R. CLAY, SONS, AND TAYLOR,  
BREAD STREET HILL.

#### THE TROPICS.

LAND of the Sun ! where joyous green-robed Spring  
And leaf-crowned Summer deck the Earth for ever ;  
No Winter stern their sweet embrace to sever  
And numb to silence every living thing,  
But bird and insect ever on the wing,  
Flitting 'mid forest glades and tangled bowers,  
While the life-giving orb's effulgent beams  
Through all the circling year call forth the flowers.  
Here graceful palms, here luscious fruits have birth ;  
The fragrant coffee, life-sustaining rice,  
Sweet canes, and wondrous gums, and odorous spice ;  
While Flora's choicest treasures crowd the teeming earth.  
Beside each cot the golden Orange stands,  
And broad-leaved Plantain, pride of Tropic lands.

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ENGLAND.

SWEET changing Seasons ! Winter cold and stern,  
Fair Spring with budding leaf and opening flower,  
And Summer when the sun's creative power  
Brings leafy groves and glades of feathery fern,  
The glorious blossoms of sweet-scented May,  
The flowery hedgerows and the fragrant hay,  
And the wide landscape's many-tinted sheen.  
Then Autumn's yellow woods and days serene ;  
And when we've gathered in the harvest's treasure,  
The long nights bring us round the blazing hearth,  
The chosen haunt of every social pleasure.  
Land of green fields and flowers ! Thou givest birth  
To shifting scenes of beauty, which outshine  
Th' unvarying splendours of the Tropic's clime.

## PREFACE.

THE luxuriance and beauty of Tropical Nature is a well-worn theme, and there is little new to say about it. The traveller and the naturalist have combined to praise, and not unfrequently to exaggerate the charms of tropical life—its heat and light, its superb vegetable forms, its brilliant tints of flower and bird and insect. Each strange and beautiful object has been described in detail; and both the scenery and the natural phenomena of the tropics have been depicted by master hands and with glowing colours. But, so far as I am aware, no one has yet attempted to give a general view of the phenomena which are *essentially* tropical, or to determine the causes and conditions of those phenomena. The local has not been separated from the general, the accidental from the essential; and, as a natural result, many erroneous ideas have become current as to what are really the characteristics of the tropical as distinguished from the temperate zones.

In the present volume I have attempted to supply this want; and for my materials have drawn chiefly on my own twelve years' experience of the eastern and western tropics of the equatorial zone, where the characteristic phenomena of tropical life are fully manifested.

So many of the most remarkable forms of life are now restricted to the tropics, and the relations of these to extinct types which once inhabited the temperate zones open up so many interesting questions as to the past history of the earth, that the present inquiry may be considered a necessary preliminary to a study of the problem—how to determine the climates of geologic periods from the character of their organic remains. This part of the subject is however both complex and difficult, and I have only attempted to indicate what seem to me the special physical conditions to which the existing peculiarities of tropical life are mainly due.

The three opening chapters treat the subject under the headings of climate, vegetation, and animal life. The conditions and causes of the equatorial climate are discussed in some detail, and the somewhat complex principles on which it depends are popularly explained. In the chapters on plant and animal life, the general aspects and relations of their several component elements have been dwelt upon; all botanical and zoological details and nomenclature being excluded, except so far

## PREFACE.

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as was absolutely necessary to give precision to the descriptions and to enable us to deduce from them some conclusions of importance.

The remaining chapters have all a more or less direct connection with the leading subject. The family of humming-birds is taken as an illustration of the luxuriant development of allied forms in the tropics, and as showing the special mode in which natural selection has acted to bring about considerable changes in a limited period. The discussion on the nature and origin of the colours of animals and plants, is intended to show how far and in what way these are dependent on the climate and physical conditions of the tropics. The chapter entitled "By-paths in the Domain of Biology" contains an account of certain curious relations of colour to locality, which are almost exclusively manifested within the tropical zones; while the essay on "Distribution of Animals and Geographical Changes," elucidates the relations of the several continents in past time, and the probable origin of many of the groups now characteristic of tropical or of temperate regions.

While discussing the general laws and phenomena of colour in the organic world, and its special developments among certain groups of animals, I have been led to a theory of the diverse colours of the sexes and of the special ornaments and brilliant hues which dis-

tinguish certain male birds and insects, which is directly opposed to the view held by Mr. Darwin and so well explained and illustrated in his great work on “The Descent of Man and on Selection in Relation to Sex.” Being strongly impressed with the importance and fundamental truth of this theory, I published my first sketch of the subject in *Macmillan’s Magazine* in order that it might have the benefit of criticism before making it public in a more permanent form. Taking advantage of some suggestions from Mr. Darwin and from a few other correspondents, I have made considerable additions to the original essay and have rearranged, and I trust strengthened the argument, which I now hope may attract the attention of all who are interested in the subject. I may be allowed here to remark, that my theory cannot be properly understood without reading the whole chapter on “The Colours of Animals;” because the view set forth and illustrated in the first part of that chapter—that colour in nature is normal, and that its presence hardly requires to be accounted for so much as its absence—is an essential part of the theory.

CROYDON, *April*, 1878.



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