

CHAPTER XXI.

ON THE ORIGIN OF SPECIES BY VARIATION AND NATURAL SELECTION.

MR. DARWIN'S THEORY OF THE ORIGIN OF SPECIES BY NATURAL SELECTION—MEMOIR BY MR. WALLACE—MANNER IN WHICH FAVOURED RACES PREVAIL IN THE STRUGGLE FOR EXISTENCE—FORMATION OF NEW RACES BY BREEDING—HYPOTHESES OF DEFINITE AND INDEFINITE MODIFIABILITY EQUALLY ARBITRARY—COMPETITION AND EXTINCTION OF RACES—PROGRESSION NOT A NECESSARY ACCOMPANIMENT OF VARIATION—DISTINCT CLASSES OF PHENOMENA WHICH NATURAL SELECTION EXPLAINS—UNITY OF TYPE, RUDIMENTARY ORGANS, GEOGRAPHICAL DISTRIBUTION, RELATION OF THE EXTINCT TO THE LIVING FAUNA AND FLORA, AND MUTUAL RELATIONS OF SUCCESSIVE GROUPS OF FOSSIL FORMS—LIGHT THROWN ON EMBRYOLOGICAL DEVELOPMENT BY NATURAL SELECTION—WHY LARGE GENERA HAVE MORE VARIABLE SPECIES THAN SMALL ONES—DR. HOOKER ON THE EVIDENCE AFFORDED BY THE VEGETABLE KINGDOM IN FAVOUR OF CREATION BY VARIATION—STEENSTRUP ON ALTERNATE GENERATION—HOW FAR THE DOCTRINE OF INDEPENDENT CREATION IS OPPOSED TO THE LAWS NOW GOVERNING THE MIGRATION OF SPECIES.

FOR many years after the promulgation of Lamarck's doctrine of progressive development, geologists were much occupied with the question whether the past changes in the animate and inanimate world were brought about by sudden and paroxysmal action, or gradually and continuously, by causes differing neither in kind nor degree from those now in operation.

The anonymous author of 'The Vestiges of Creation' published in 1844 a treatise, written in a clear and attractive style, which made the English public familiar with the leading views of Lamarck on transmutation and progression, but brought no new facts or original line of argument to