

already remarked, changes in organic forms must, on the whole, have been extremely slow in the geological past. The whole species of a sea-floor could not pass entirely away, and be replaced by other forms, without the lapse of long periods of time. If, then, among the conformable stratified deposits of former ages, we encounter abrupt and important changes in the facies of the fossils, we may be certain that these must mark omissions in the record, which we may hope to fill in from a more perfect series elsewhere. The striking palæontological contrasts between unconformable strata are sufficiently explicable. It is not so easy to give a satisfactory account of those which occur where the strata are strictly conformable, and where no evidence can be observed of any considerable change of physical conditions at the time of deposit. A group of quite conformable strata, having the same general lithological characters throughout, may be marked by a great discrepancy between the fossils of the upper and the lower part. A few species may pass from the one into the other, or perhaps every species may be different. In cases of this kind, when proved to be not merely local but persistent over considerable areas, we must admit, notwithstanding the apparently undisturbed and continuous character of the original deposition of the strata, that the abrupt transition from the one facies of fossils to the other represents a long interval of time which has not been recorded by the deposit of strata. Sir A. C. Ramsay, who called attention to these gaps, termed them "breaks in the succession of organic remains."²⁰ They occur abundantly among the European Palæozoic and Secondary rocks, which, by means of them,

²⁰ Q. J. Geol. Soc. xix. xx. Presidential Addresses.