

#\$k THE GENERIC NAMES OF  
THE BUTTERFLIES  
AND THEIR TYPE-SPECIES  
(LEPIDOPTERA: RHOPALOCERA)

BY  
FRANCES HEMMING

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## PREFACE

Although the butterflies have probably been the subject of study for longer than any other group of insects, no comprehensive account of all their genera has been published since Doubleday and Westwood's *General of Diurnal Lepidoptera* (1846-50), which was long before the establishment of any Code of Nomenclature.

The immense task of extracting, collating and verifying the names of these genera, and presenting them comprehensively, together with those of their type-species, could have been carried through only by one with deep and intimate knowledge of the literature and a thorough understanding of the rules of zoological nomenclature. These attributes were possessed by the late Frances Hemming, who has used them to produce this major contribution to the stability of the generic nomenclature of the butterflies of the world.

The Trustees are grateful to Mrs M.F.W.Hemming for affording them the opportunity of publishing posthumously this important work, which the author had completed only a few days before his untimely death on February 22<sup>nd</sup>, 1964; to Mr N.D. Riley for his valued assistance in preparing the manuscript for the printers, and to Mrs Joan Newman for compiling the comprehensive index.

British Museum (Natural History)  
London, S.W.7  
23<sup>rd</sup> September, 1966

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*By* **FRANCES HEMMING**

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# SYNOPSIS

The names published for the genera of butterflies of the world from 1758 to the end of 1963 are listed alphabetically, with their type-species and requisite references. The methods employed and the building up of the list are elucidated.

## INTRODUCTION

### 1. OBJECT OF THE PRESENT WORK

The object of the present work is to provide as complete as possible a list of the generic names published for the butterflies from the inauguration of zoological nomenclature by Linnaeus in 1758 down to December 1963, with a full bibliographical reference to the place where each name was first validly published and the date of its publication. Each entry includes a statement of the name of the nominal species which is the type-species of the genus concerned, with a full bibliographical reference to the place and date of publication of the name of that species. Finally, particulars are given of the Article in the International Code of Zoological Nomenclature under which the type-species was determined, wherever this appears desirable.

The names enumerated in the present work fall into the following classes: -

- (1) names of genera duly established with a description or other indication ;
- (2) names which are Incorrect Original Spellings of names originally published in two or more spellings ;
- (3) names which are Emendations of previously published names ;
- (4) names which are Incorrect Subsequent Spellings of earlier names, i.e. variant spellings of such names, other than spellings deliberately introduced as emendations ;
- (5) names which originally appeared in works later rejected by the Commission as not being available under the Code for the purposes of zoological nomenclature or in works expressly suppressed for such purposes by the Commission under its Plenary Powers ;
- (6) names suppressed by the Commission under its Plenary Powers for the purposes either of the Law of Priority or of the Law of Homonymy or for both of those purposes.

Special care has been taken to distinguish between Emendations and Incorrect Subsequent Spellings in view of the great difference in the status assigned in the revised Code (Article 32) to names belonging to these two categories. Emendations possess status in zoological nomenclature; Incorrect Subsequent Spellings do not.

[Editor's Note. In the Alphabetical List of the Generic Names, classes 1 and 3 above are printed in bold italic capitals; classes 2, 4, 5 and 6 in italic capitals. Type-species of classes 1 and 3 are printed in bold upper and lower case, of the other classes in italics.]

## II. APPLICATION OF THE REVISED INTERNATIONAL CODE OF ZOOLOGICAL NOMENCLATURE PUBLISHED IN 1961

**(a) *Incorporation in the present work of such modifications of previous conclusions as have been rendered necessary by the new Code.***

The revised text of the International Code of Zoological Nomenclature adopted by the XVth International Congress of Zoology in London in 1958 and published in 1961 marks an immense improvement in the international regulation of zoological nomenclature. This improvement is attributable not only to the insertion of provisions relating to subjects not dealt with at all in the text previously in force (namely that adopted by the IVth International Congress at Berlin 1901), but also - and perhaps even more - to the clarification of numerous minor points in existing provisions, doubts as to the interpretation of which had long been a cause of difficulty.

Nevertheless, as is inevitable, the introduction of any new set of rules involves certain difficulties in the transitional period immediately following the date on which those rules first come into force. In the case of the present work a great deal of the material on which it is based was compiled before the promulgation of the revised text of the Code. Accordingly, on the publication of that volume it became necessary to re-examine the whole of the material so far collected, in order, where necessary to bring the conclusions previously reached into harmony with the revised provisions of the Code. Fortunately, the majority of those provisions had already been adopted either by the Paris Congress of 1948 or by the Copenhagen Congress of 1953. In consequence, it was only in a small number of cases that it was necessary to modify in the light of the new Code the conclusions previously reached in respect of the names dealt with in the present work. It was necessary however to delete references to Article Numbers in the old Code, wherever they occurred, replacing them with references to the corresponding Articles in the revised text.

***(b) Revision of provisions relating to the determination of the precedence to be accorded to generic names published on the same date.***

One of the most useful of the provisions in the new Code clarifying obscure and unsatisfactory provisions in its predecessor is Article 24(a) which relates to the precedence to be accorded to names published on the same date. In the course of the preparation of the present work numerous instances were found in which a nominal species which was the type-species of some genus being an available name was currently placed in some other genus published on the same date, without measures having been taken to ensure that the generic name so adopted should in all circumstances take precedence over the name of the genus of which the species in question is the type-species. In every such case a First Reviser choice under Article 24(a) has now been made in my work *Annotationes Lepidopterologicae*, precedence being accorded by these choices to the generic name currently in use over the other name or names concerned.

***(c) Clarification of the provisions relating to the selection of lectotypes for nominal species.***

Another provision in the revised Code which replaces a badly worded provision in the old Code is that which now appears as Article 74, which provides that in the case of any nominal species not based on a holotype any of the syntypes may be selected to be the lectotype of the species. This provision is of outstanding importance, wherever in its absence the interpretation of a nominal species would be either impracticable or at least open to serious doubt.

In the course of the preparation of the present work it was found in a considerable number of cases that the nominal species which was the type-species of some genus was based on specimens or figures of specimens currently treated subjectively on taxonomic grounds as being referable to more than one species, but no steps had been taken to secure a firm nomenclatorial basis for the interpretation adopted. In these cases the deficiency has now been made good by the selection in the work *Annot. lepid.* either of one of the syntypes of the species to be its lectotype or of a figure, either provided or cited by the original author, to represent the lectotype.

***(d) Increased emphasis in the revised Code on the need for stability and uniformity in zoological nomenclature.***

The revised Code published in 1961 places much greater stress than its predecessor on the need for promoting stability in zoological nomenclature and for avoiding vexatious or confusing name-changing on narrow technical grounds. This new outlook, which is stated in express terms in the Preamble to the revised Code and is apparent also in many of its individual provisions, takes its most practical form in the Article (Article 79) now inserted in the Code for the first time setting out the grant to the Commission of Plenary Powers to suspend the normal operation of the rules in cases in which such action is judged by the Commission to be necessary in the interests of stability and universality in nomenclature. The next following Article (Article 80) also contains a provision of great importance in the present connection this prescribes that, if a case is submitted to the Commission, existing usage is to be maintained until the decision of the Commission is published.

In the case of the butterflies there are at the present time some twenty applications pending for action under the Plenary Powers. The great majority of these relate to the names of genera considered to have been based upon misidentified type-species. In accordance with the provisions of Article 80 existing usage has been maintained in the present work in the case of all names, regarding which the Commission has been asked to give relief under the Plenary Powers. In each of these cases full particulars are given as to the situation which would arise if the normal provisions in the Code were to be applied and the action which the Commission has been asked to take under its Plenary Powers.

### III. SCOPE AND ARRANGEMENT

#### **(a) *Compilation of a single world list instead of a series of zoo-geographical faunistic lists.***

When, in the early nineteen-thirties, I conceived the idea of writing a book on the generic names of the butterflies, my idea was to divide the task into two portions; the first dealing with the names of genera occurring in the Temperate portion of the Northern Hemisphere, that is, in the Palaearctic and Nearctic Regions, while the second portion would be concerned with the names of genera occurring in the Tropics of the Old World and the New. It seemed to me at that time that a division of the subject of this kind would have the advantage of providing in a compact form the information needed by lepidopterists, most of whom then (as now) confined their attention to the faunas of particular zoo-geographical areas, relatively few working on an all-world basis. What was intended to be a first instalment of the first of the foregoing works was published by the Trustees of the British Museum in 1934 as volume 1 of a work entitled "The Generic Names of the Holarctic Butterflies". That volume dealt with names published from 1758 up to the end of 1863. This latter date was selected, because it was the last year before the publication of the first volume of the Zoological Record. The adoption of this date thus closed the awkward gap which had previously existed between the beginning of that serial and the closing year of the period covered by Sherborn's Index Animalium. The names dealt with in the foregoing volume amounted to 500 in number and constituted a self-contained group in the sense that very few of the genera, the names of which were there listed occurred outside, as well as inside, the Holarctic Region.

A very different situation was disclosed when the projected second instalment of the work on the Holarctic names came to be prepared. Here it was found that in addition to a large number of strictly Holarctic genera, there were also many nominal genera which from faunistic point of view could not be classified so easily. Each of these genera had as its type-species a species that did not occur in the Holarctic Region but which was regarded subjectively on taxonomic grounds as being congeneric with the type-species of some other genus not represented in the Holarctic Region. Either to include such names in, or to exclude them from, a work concerned only with a particular zoo-geographical Region would inevitably have given rise to serious difficulties. If they were to be included, serious gaps would be created in the companion work on the names of extra-holarctic genera, unless the same particulars were to be inserted in that volume, a course which would have involved a substantial amount of repetition. The exclusion of these names from the book dealing with the names of holarctic genera would on the other hand have rendered very incomplete the subjective generic synonymies then currently accepted.

The difficulties discussed above are inherent in any attempt to deal with a world fauna in a series of separate sections. Accordingly, it was finally decided to abandon the plan to present the two portions of the present subject in independent works, dealing respectively with the names of genera occurring in the Temperate and Tropical parts of the world, and in its place to deal with the whole subject in a single work. Hence it is that the list now presented contains all the names so far published for genera of butterflies, irrespective of the zoo-geographical regions in which those genera occur.

#### **(b) *Exclusion of systematic considerations and consequent adoption of an alphabetical basis for the arrangement of generic names.***

As a corollary to the foregoing modification of the original plan, it was decided also to depart in another respect from the arrangement adopted in the volume published in 1934. In that volume the survey of the nomenclatorial issues arising in connection with the names of genera occurring in the Holarctic Region was combined with a taxonomic appraisal of the status of the genera concerned. The generic names were grouped under the families in which the genera concerned were currently placed, and within each family were arranged in the systematic order then in general use. Names that were invalid either under the Law of Homonymy or by reason of being junior objective synonyms were cited immediately after the name accepted as the oldest nomenclatorially available name applicable to the genus in question. To these objective synonyms were added any generic names which, though available nomenclatorially, were then currently treated as junior subjective synonyms. An arrangement of this kind is essential in any purely systematic check-list or catalogue, but is now considered inappropriate in a work such as the present, the purpose of which is purely nomenclatorial. Accordingly, in the present work the particulars given for each generic name are exclusively nomenclatorial in character. The only comment offered in supplement to the necessary bibliographical particulars is in respect of those cases in which a generic name is objectively invalid under the Code and in consequence could not in any circumstances be validly employed. The exclusion of subjective ideas regarding the taxonomic relationship towards one another of the genera bearing the names listed has made it possible

to simplify the presentation of the whole subject by arranging the whole body of generic names in a single alphabetical list.

The fact that the information now provided in relation to generic names is confined entirely to matters of objective nomenclatorial fact greatly enhances the value of the present work as a guide to the nomenclature of the genera of the butterflies. This does not do away with the need for a synonymic check list of the butterflies of the world; it is only a step towards the preparation of one.

***(c) Determination of the taxa represented by nominal species which are the type-species of genera.***

Many genera, especially those of older date, have as their type-species nominal species bearing names which are commonly treated as junior subjective synonyms of other names and are themselves practically unknown, except to specialists. Accordingly, in order to make clear the meaning of the entries made in respect of such names, brief notes have been added setting out the synonymy currently accepted for the names of the type-species concerned. These notes, which have been inserted by way of explanation only, have been kept entirely distinct from the entry made for the generic name itself, this latter, like all similar entries, being confined to the recording of the relevant objective nomenclatorial facts.

#### **IV. COLLECTION OF THE INFORMATION**

The information needed for the preparation of the present work was of three kinds. First, it was necessary to build up as complete as possible a list of the names so far published for genera of butterflies, and to ascertain by whom, when and in what work each name was first validly published. Second, it was necessary to determine for each name its status in relation of the Law of Homonymy, that is, to ascertain whether it had previously been employed as the name for a genus in any part of the animal kingdom. The third and last stage was to ascertain the status of each name under the Law of Priority, that is, to determine whether it was an available name or whether it was a junior objective synonym of an available name of older date. This stage could be carried out only after the nominal species which were the type-species of the nominal genera concerned had been determined and in consequence it was possible to make sure that the nominal species which was the type-species of any given genus was or was not the type-species also of some other genus bearing an available name of older date.

***(a) Building-up of the list of generic names***

The first period to be examined was that beginning in 1758 and ending in 1863, for which there existed no comprehensive list of generic names, though the great majority of such names are to be found in the very important paper by Samuel Hubbard Scudder published in 1875 under the title "Historical Sketch of the Generic Names proposed for Butterflies" (Proc. amer. Acad. Arts Sci., Boston, 10). For this opening period, and especially the years 1851-1863 (about which at that time very little was known) it was necessary to search many books in case they might contain new generic names not subsequently detected. A number of previously overlooked names were brought to light in this way. As soon as possible after the discovery of such names type-species were selected by myself in such a way as to make the generic names in question either junior objective synonyms of names in current use or, where this was not possible, junior subjective synonyms of such names, objectionable name-changing being thereby avoided. Another valuable contemporary work of special value in the search for early generic names was the monumental *Genera of diurnal Lepidoptera* started by Doubleday in 1846 and completed after Doubleday's death by Westwood in the period 1850-1852, for that work contains extensive generic synonymies which, though not accompanied by bibliographical references, were found to be of great use in drawing attention to obscure names published by earlier authors which might otherwise have been overlooked.

Reference may conveniently be made at this point to an unfortunate practice adopted by Westwood in his continuation of Doubleday's *Genera*, namely the frequent citation in generic synonymies of generic names stated by Westwood to have been proposed in manuscript by other authors, notably by the celebrated French entomologist J. B. A. Boisduval. The names published by Westwood in this way were long ignored, but their existence constituted a potential threat to stability, especially after the publication of the Code adopted by the Berlin Congress of 1901, which contained no provision denying the status of availability to such names. In order to set this particular danger at rest, I myself in 1941 (*J. Soc. Bibl. nat. Hist.* 1 : 413-446) selected type-species for these nominal genera in such a way as to make these names either junior objective synonyms, or junior subjective synonyms of names in current use, thereby depriving these names of any power of disturbing nomenclatorial practice. Twenty years

later a provision - Article II(d) - was inserted in the revised Code of 1961, containing an express ruling that the publication of a name as a synonym does not confer upon it the status of availability.

For generic names published after 1863 the principal sources were the successive volumes of the Zoological Record, of which the first volume dealt with the literature published in 1864 and the most recent (vol. 98) with that published in 1961. In addition, a certain number of generic names which up to that time had been overlooked by the editors of the Second were brought to light by the examination of catalogues, check-lists and synonymic revisions of various kinds. Finally, a few generic names published since 1961 and therefore not yet noted in the Record have come to light through the receipt of separates from the authors concerned.

At the outset of the preparation of the present work I decided that, insofar as this was physically possible, I would myself examine the original descriptions of all the generic names dealt with, in order thereby both to check the spelling of the names concerned, to verify the bibliographical references involved, and to determine dates of publication more closely than had in many cases been thought necessary previously. It is satisfactory to be able to record that the original references for the generic names listed in the present work - nearly 3,400 in number - have all been personally inspected by myself, except two names. These are contained in works of which it has proved impossible to trace a copy in this country. In these cases only was it necessary to rely upon second-hand sources of information. A similar procedure was adopted in the preparation of bibliographical references for the names of nominal species which are the type-species of nominal genera.

**(b) *Determination of cases of generic homonymy***

Until comparatively recent times, the task of determining whether a given generic name had previously been employed as the name for a genus in some other part of the animal kingdom was laborious and time-consuming, it being necessary to consult successively such works as the "Nomenclators" compiled by Agassiz (1846), Marschall (1873), Scudder (1882), and for later years the annual volumes of the Zoological Record. It was therefore a great relief when in 1939-1940 there appeared the four volumes of Neave's Nomenclator Zoologicus, which brought together the information contained in all previous "Nomenclators" and also that given in Sherborn's Index Animalium, and moreover carried the record forward to the end of the year 1935 and, in the Supplement published in 1950, down to the end of 1945. For the later years it is still necessary, pending the publication of the next Supplement to Neave's work, to consult the successive volumes of the Zoological Record. Much of the material on which the present work is based had been compiled before the publication of Neave's Nomenclator; upon the appearance of that work all the evidence so far collected was re-checked by reference to it. A similar procedure was adopted on the publication (as noted above) of the supplementary volume of Neave's work.

The number of generic names in the butterflies that are invalid under the Law of Homonymy is considerable, but most of those requiring replacement were found already to have been replaced by the time that the survey described above was carried out. In so far as it was found that this had not been done, replacement names were subsequently published in the Annot. Lep. if this was judged to be necessary on taxonomic grounds.

**(c) *Determination of the type-species of genera and consequent ascertainment of the status of the names of genera under the Law of Priority.***

For by far the greater number of nominal genera the type-species was determined by original designation by the author of the name concerned or was determined automatically by monotypy, one nominal species only having been cited by the original author as belonging to the genus concerned. Nevertheless, there are many hundreds of genera, the determination of the type-species of which rests on subsequent selection.

For most of the nominal genera falling in this last group the currently accepted type-designation consists of a statement by some later author that some particular one of the originally included species is the type-species, there being nothing in that statement to indicate whether the author making it was himself then making the type-selection or whether he looked upon himself merely as recording that the species in question was the type-species through action already taken by some unspecified author. Moreover, the widespread acceptance in the mid-XIXth century of the so-called "Principle of Elimination" led to the rejection in many cases of earlier type-selections which under the Code - not then in existence - were perfectly valid. Another misconception entertained by some authors in the same period, which led to the making of invalid type-selections, was the erroneous belief that a type-selection should be treated as acceptable even if the nominal species selected was not cited as belonging to the genus when the name of that genus was first published provided that, in the opinion of the author making the selection, it represented the same taxon as that represented by some nominal

species which was originally included. For these and other reasons of a similar kind it was evident from the outset of the present work that a thorough search of the old literature was required, in order to determine as certainly as possible when, where, and by whom one of the originally included nominal species was first validly selected to be the type-species of each of the genera concerned.

Since the essence of the rule relating to the selection of type-species by subsequent authors is that it is the earliest selection of one of the originally included species which alone is operative, it was decided that the search to be undertaken in the present instance should be carried out chronologically, books and other works which might contain type-selections being examined in the order in which they had been published. This procedure was found to work satisfactorily, for directly the selection of one of the originally included species to be the type-species of any given genus had been found, the generic name in question was eliminated from further consideration, it being necessary thereafter only to examine the literature for possible type-selections for those genera for which no type-species had as yet been determined. On the other hand, this procedure was extremely laborious and time-consuming. First, great care was needed in searching each volume, it being found in numerous cases that valid type-selections had been made in the most inconspicuous fashion, some almost parenthetically in a sentence dealing with some other subject. The greater part of the survey described above was concerned with works published from the beginning of the XIXth century - when authors such as Latreille began to select type-species for genera - up to the year 1875 when (as has already been explained) Scudder in his "Historical Sketch" set himself the task of determining the type-species of every nominal genus of butterflies known to him. Writing long before the adoption of the International Code, Scudder in many cases guided himself by rules which were never ultimately incorporated into the Code. In consequence many of the conclusions which he reached in the "Historical Sketch" are incorrect under the present Code. In spite of these inevitable defects this paper of Scudder's remains by far the most important single contribution to the generic nomenclature of the butterflies published in the XIXth century. After Scudder's time, the entomologists who established nominal genera without designating or indicating type-species became fewer and fewer, and in most cases if a name was published in this way, the deficiency was made good shortly afterwards, sometimes in the next following volume of the Zoological Record, sometimes by the next author to deal with the group concerned.

The problem discussed above came to an end as from the close of 1930, in the sense that no new genus-group taxon published after that date acquired the status of availability unless, on publication, its author specified its type-species. This decision, which was adopted by the Budapest Congress in 1927, now appears in Article 13(b) in the revised Code.

The search of the literature described above brought to light a number of previously overlooked type-selections made for the most part in works which had never been studied - or at least had never been thoroughly studied - from this point of view. In some cases the discovery of these earlier type-selections had the effect only of confirming the position of the nominal species currently accepted as type-species, though as from an earlier date and in most cases from a different author. In other cases changes in type-species were involved, but none of these led to any serious disturbances in existing nomenclatorial practice, the names concerned becoming - or remaining - objective or subjective junior synonyms of older names in current use. The search of the literature was carried out as systematically as possible, and it is believed that very few previously overlooked type-selection escaped attention. In view however of the great mass of the literature involved, it would be too much to expect that no type-selection had been missed in the search, but it is hoped that the number of such cases is very small.

***(d) Selection of type-species for genera found to be still in need of definition in this way.***

In the course of the search of the literature there was found to be a considerable number of nominal genera, for which no type-species had ever been selected. In the case of genera established in the XIXth century this lack of a type-species was due in many cases to an erroneous belief that the name in question was invalid and therefore that the selection of a type-species was unnecessary. The generic names incorrectly rejected in this way were for the most part either the names of genera established without included nominal species - a method of publishing a name long regarded by many authors, though erroneously, to invalidate the name concerned or names incorrectly regarded as junior homonyms of similar, though not identical, names of older date. Type-species have now been selected for every genus found to be without one.

In the interests of nomenclatorial stability the general principle followed in making these type-selections has been to secure that the generic names concerned should become junior objective synonyms of available names of older date or, where this was not practicable, junior subjective synonyms of such names.

It was only when a type-species had been validly determined for every nominal genus that it became possible definitely to establish which generic names were available under the Law of Priority and

which were invalid as junior objective synonyms of names of older date. In the case of each name found to be objectively invalid in this way, a brief explanatory note has been added to the text.

## V. DETERMINATION OF DATES OF PUBLICATION

Throughout the whole of the XIXth century students of the butterflies - and indeed of the Lepidoptera generally - were greatly handicapped by the almost total lack of information available regarding the dates of publication of the principal works of the German entomologist Jacob Hübner of Augsburg and of the posthumously issued supplements to certain of those works edited by his assistant Carl Geyer. These works, which were published over a period of forty years (1796-1838), were issued in parts of unknown size on unknown dates separated from one another by irregular intervals. The problem here involved was not simply one of ascertaining the dates to be assigned to the numerous new names published in these works; it was the much more important question of the priority to be accorded to many of these names in relation to other names published at about the same time by other authors for the same taxa. The most important of Hübner's works from the present point of view are his *Verzeichniss bekannter Schmettlinge* [sic] and his *Sammlung exotischer Schmetterlinge* with its companion work the *Zuträge*, all of which contain many new generic names, especially the *Verzeichniss*, the most important work from this point of view ever published on the Lepidoptera.

Another important work containing great numbers of new generic names, about the dates of publication of which great doubts long existed and much consequent confusion was caused, is Edward Doubleday's *Genera of Diurnal Lepidoptera*. This work was published in parts, of which the first appeared in 1846, other parts appearing on various dates until Doubleday's death in December 1849. Nearly a year later publication was resumed under the direction of J. O. Westwood who had been engaged by the publishers to carry out this task. The work was ultimately completed in August 1852. Almost from the beginning there was a serious lack of balance between the rates at which plates and instalments of text were published. Ignorance regarding the relevant rates of publication of these two portions of this work gave rise to serious difficulties at the generic-name level, for there were often substantial differences between the way in which new generic names were employed on the plates and in the text respectively.

When in the early nineteen-thirties, I began the preparation of the present work, it was evident that no satisfactory presentation of the generic names of the butterflies would be practicable until the doubts as to the dates of publication of the component portions of the works by Hübner and Doubleday discussed above had been completely eliminated or at least reduced to very small dimensions. I had already at that time undertaken some investigations in regard to the foregoing works, and I decided to press on with these in every possible way, even if this were to involve - as it ultimately did involve - putting on one side for some time my investigations of the generic names as such.

In the case of works by Hübner and his successor Geyer an immense stroke of luck occurred when in 1935 the surviving manuscripts of those authors suddenly became available for study after having been lost to sight for many years. It had long been believed that there might be a chance that after the death of Geyer these documents had been passed into the hands of Herrich-Schäffer and that after his death they had been acquired by the well-known entomologist C. F. Freyer, a fellow-townsmen of Hübner's and author of the earliest obituary notice of Hübner's life. All trace of the subsequent history of these documents was lost until, following a suggestion of C. D. Sherborn's, investigation put in hand in 1935 established that they had many years earlier become the property of the great Berlin firm of booksellers R. Freidlander und Sohn. These documents had never been examined after Hübner's death and on their presentation to the Royal Entomological Society of London by the late Mr. R. W. Lloyd by whom they had been purchased, it became evident at once that they contained a great deal of the most valuable information throwing light on the dates of publication of Hübner's works. I at once started with the assistance of Mr. Francis J. Griffin, at that time Registrar to the Royal Entomological Society, a detailed examination of the very varied and very numerous documents included in the collection. This search, which occupied the whole of the time at my disposal for over a year, made it possible ultimately to determine the precise date of publication of almost every plate and sheet of text of Hübner's works or, if this did not prove to be practicable, to establish publication dates within very narrow ranges. The result of these investigations was published by the Royal Entomological Society in my work entitled "Hübner" (2 vols) which appeared in February 1937.

Immediately after the conclusion of the Hübner problem, work was resumed on the corresponding problem on Doubleday's "Genera". The first steps in this matter had been taken in 1931 and thereafter additional information of various kinds had accumulated during the time when the Hübner problem was under investigation. Thereafter further information was obtained from various sources, this

information interlocking with, and extending that previously collected. Finally it was possible to present a statement of conclusions, in which a precise date of publication was assigned to each sheet of text in, and to each plate comprised in, Doubleday's "Genera" (Hemming, 1941, J. Soc. Bibl. Soc. nat. Hist. (1): 335-411). The disappearance of doubt as to the dates to be assigned to new names published by Hübner in his various works and by Doubleday in his "Genera", eliminated two causes of confusion of a purely bibliographical nature which had for long seriously impeded the work of lepidopterists.

## VI. FORM OF ENTRY ADOPTED

Two points regarding the form of entry adopted call for brief notice.

### (a) *Abbreviation of titles.*

For every name published in a serial publication, the abbreviation adopted in citing that serial is that laid down in the "World List of Scientific Periodicals", the 3rd edition of which records the titles of periodicals published in the period 1900-1950. In the case of names published in other serials not listed in the above volume, the titles are abbreviated in accordance with the principles adopted in the "World List". In some cases it has been found possible, by combining elements in the abbreviations adopted in the "World List" for the titles of two or more serials having somewhat similar titles, to devise a form of abbreviation identical in type with that adopted in the "World List". In the case of serials bearing titles for which no near analogy can be found, abbreviations have been devised on lines in harmony with those that one might have expected to find in the "World List".

The abbreviation of the titles of separate works is more difficult than that of the titles of serials, there being in this case no external guide such as the "World List". In the abbreviations here adopted for such works the aim has been to secure uniformity and intelligibility. Many separate works bear titles containing words that appear also in the titles of other works, e.g. words used to denote particular zoogeographical regions and explanatory words such as "Introduction", "Beitrag" and the like; for all such words a uniform method of abbreviation has been adopted. As regards intelligibility, experience has often shown that the titles as commonly cited in standard works are abbreviated in so compressed - and therefore so incomplete - a form that, unless the reader is already familiar with the work concerned, its identification in library catalogues is a matter of considerable difficulty. To overcome this, the form of abbreviation here adopted for the citation of the titles of a considerable number of separate works is fuller than that usually employed. Similarly, it often happens that important works forming contributions to some larger work - for example, some large faunistic work or the report of some widely based Expedition - are cited in such a way that the identification of the volume concerned is a matter of difficulty. In such cases the subsidiary Section Number, Teil Number or the like has been inserted in the abbreviation here adopted. In addition, in such cases, the name of the general editor or principal contributor has been added to the title cited, it being under the name of that author that the entire work is most commonly found in library catalogues.

There is a considerable number of important contributions to the literature, which, though published in some serial, are habitually cited by their own titles as though they had appeared as separate works. A striking example of this inconvenient and misleading method of citation is provided by a very important work by Herrich-Schaeffer on the generic classification of the butterflies published in instalments over the years 1864-1871 in volumes 18-19 and 21-25 of the serial *Correspondenzblatt der zoologisch-mineralogischer Verein in Regensburg*. This work is almost invariably cited by reference to the re-paged off-print issued after the completion of the paper, where it appears as though it was a separate work published in three volumes under the title "Prodrömus Systematis Lepidopterorum", this being no more than the title of the paper as published in the *Correspondenzblatt*. A name published in a paper commonly misquoted in the foregoing way is cited in the present work as having been published in the serial in which it did in fact appear, followed by the number of the volume of the serial and the number of the page in that volume, the reference so given being followed in brackets - parentheses - by the incorrect reference under which the name has commonly been cited.

### (b) *Adoption of the form of entry employed by the International Commission on Zoological Nomenclature in the "Official List of Generic Names in Zoology".*

The decision to employ in the present work an alphabetical, instead of a systematic, arrangement made it possible to introduce a simpler and shorter form for the entry of names than had previously been practicable. The form of entry adopted by the Commission for the Official List of Generic Names in Zoology contains all the information required for the purposes of the present work and moreover has the advantage that it is now well-known and generally understood. It has accordingly been adopted in

the present work, with the exception that the statement of the type-species is given in a separate sentence, not in parentheses.

## VII. ACKNOWLEDGEMENTS AND THANKS

The present work was compiled at home in my spare time until 1953 in which year I retired from my former occupation and was able to devote the whole of my time to this task. This method of compiling this book was rendered possible only by the fact that I was able to rely for a great many of the references required upon my large private library of entomological works. Naturally, however, even when the fullest advantage had been taken of this source of information, there remained hundreds of names published in works which it was necessary to consult elsewhere and in addition a large number of works which needed to be consulted in case they contained type selections of genera that had so far been overlooked. For this purpose full use was made of institutional libraries, such as those of the Zoological Society of London, the Linnaean Society of London and the Royal Entomological Society of London. In many cases books were borrowed from these libraries while in many others, an examination of the books in question was actually carried out in the libraries of the institutions concerned. By these means the original references for almost all the generic names were examined and the titles of the works in which they had been published verified and only a relatively small number of works which it was thought might contain overlooked type-selections still required individual examination. For the facilities provided for examining the books which still needed to be consulted I am greatly indebted to the authorities of the British Museum (Natural History).

The members of the Scientific Staff of the Department of Entomology at the British Museum (Natural History), with whom my investigations brought me into contact, were uniformly kind and helpful, and I am happy to have this opportunity of expressing to them my grateful thanks. In particular I desire to thank my old friend Dr. N. D. Riley, who during the greater part of the period covered by the preparation of the present work, occupied the position of Keeper of the Department of Entomology, for the unstinted help given by him on numberless occasions on questions relating to individual names or on the writings of particular authors, and for the unflinching interest which he has shown in the progress of the present enterprise. I would feel it a serious omission also if I did not express my warm feeling of gratitude to two very distinguished workers at the Museum whom death alone has made it impossible for me to thank in any other way. These were Dr. Charles Davies Sherborn, the most learned bibliographer of our time, and Dr. Karl Jordan, who in the course of a long life had acquired unrivalled knowledge of the Lepidoptera and the literature relating to them.

My grateful thanks are also offered to the Learned Societies to which I have already referred and to the Library Officials of those Institutions. I am very grateful also to the numerous specialists, both at home and abroad, whom I have consulted at various times and who have most kindly given me the benefit of their views. Where these consultations brought to light valuable new information, the position has been explained in the entry relating to the generic name concerned and my thanks have been expressed to the specialists consulted.

I wish to give my grateful thanks to Mrs. Joan Newman, who acted as my Personal Assistant in the period 1958-1960. She was of the greatest help to me both in verifying bibliographical references for the names of the type-species of genera and also in undertaking the laborious task of comparing references entered on the cards on which this work was compiled for the purpose of making sure that when a given work was referred to on more than one occasion, the form of abbreviation used in citing the title of that work was always the same.

There is another matter, quite distinct from the facilities for the study of rare books and serials which were kindly put at my disposal, on which I desire to express my thanks to the Trustees of the British Museum (Natural History). As has already been explained, the subject matter of the present book is strictly nomenclatorial save in one particular where taxonomic considerations have been taken into account. This one exception arises in connection with the notes added to the entries relating to certain generic names regarding the taxonomic status currently assigned to the taxa represented by the type-species of the genera concerned. Such notes have been inserted only in those cases where the taxon represented by the nominal species concerned is either subjectively identified with, or is treated as a subspecies of, the taxon represented by some other nominal species bearing a name of older date. The responsibility for the views expressed in these notes rests entirely with myself and in most cases those views represent the conclusions reached by myself from my own knowledge of the taxa concerned and of the literature relating to them. However, in a minority of cases - confined to the type-species of certain tropical genera - I did not feel that I possessed sufficient knowledge to form more than a provisional conclusion. In the case of these nominal species, about all of which the literature is extremely scanty, it was of very great assistance to be able to for study the senes represented in the

Museum collection and in the light of that study either to confirm or modify the tentative conclusions previously reached.

Finally, I wish to thank my family for the help given in various ways and for the constant interest shown in the progress of the present work. My wife has often given valuable help on such matters as logical presentation and generally on questions of methodology. In the course of the preparation of the typescript of this work help and advice have been given to me also by my daughters Rachel and Judith.