

## ORNITHOLOGICAL LITERATURE

PESTICIDES AND THE LIVING LANDSCAPE. By Robert L. Rudd. University of Wisconsin Press, Madison, 1964: 6¼ × 9½ in., xiv + 320 pp., 22 tables, 1 fig. \$6.50.

This critically important book is a Conservation Foundation Study. The author is currently an Associate Professor of Zoology at the University of California, Davis. He has a broad background in ecology and wildlife management which includes four years of research on the effects of pesticides on wildlife populations in California. Mr. Rudd modestly identifies the purpose of his book as “. . . to explain to the serious reader, particularly one with responsibilities relevant to the subject, what the kinds of hazards resulting from chemical pest control are.” The author has certainly created a work which admirably achieves this goal; I suspect that a much wider audience will find his book to be immensely worthwhile reading. The scope of this work goes beyond the usual concept of pesticides and includes an appraisal of control programs aimed at birds and mammals. This is a well-organized section with a good historical background and a summary of recommendations.

Rudd makes his own position clear at the very beginning. Granted that man can mold much of his environment to suit his own immediate needs, he is still not independent of the ecological consequences of his actions. The author suggests (page 4) that “Concomitance . . . living with natural forces . . . rather than dominance is the only route to enduring self-interest.” Rudd is aware of the value of pesticides and states (page 4), “We realize, for example, that successes in pest control have, along with other technological applications, greatly changed the yields in American forest, grazing, and crop environments.” Alongside the unquestioned values of pesticides, Rudd poses a list of objections which include the following points: (1) Pesticides are really biocides which kill other forms of life along with target species. (2) The application of pesticides is often not restricted to target species or target area. (3) We are not paying enough attention to alternative means of crop protection. (4) The problems of delayed toxicity, secondary poisoning, storage, and concentration in food chains are now well enough known to raise serious questions as to the widespread use of many of our common pesticides.

Following his introductory chapters which attempt to present the pesticide problem in capsule form, the author proceeds with a section containing four chapters which are a review and summary of chemicals used in the control of pests. This material is presented in nontechnical terms understandable to the layman. It contains a description of the kinds of pesticides, including a table of acute and chronic oral toxicities of some common pesticides. As elsewhere in the text, his treatment is thorough, but not so technical as to be obscure to an interested lay reader. The book continues with a discussion of pest-control methods and programs with special attention to local versus mass control programs. Under “Loss, Cost, and Gain,” Rudd analyzes the justification of pest control. He concludes this section with a consideration of the basis of pesticide legislation which contains some very interesting discussions of the introduction of early insect pests and subsequent legal measures which have been aimed at these problems.

The remaining three-quarters of the book is an ecological discussion of the effects of pesticides on man, wildlife, and the environment. From the vantage point of his own extensive experience in pesticide-wildlife relationships, Mr. Rudd constructs a very impressive review of the effects of pesticides on invertebrates, cold-blooded vertebrates, and warm-blooded vertebrates. He includes discussions of resistance to insecticides, pesticide residues, predator-prey relationships, and the highly interesting phenomenon of substitution of one closely related form for another following pesticide treatment.

The concluding chapters are concerned with the transfer of pesticides in food chains, secondary poisoning, and changes in faunal composition following pesticide treatment. Some of the most interesting reading in the book appears in the author's examples of pesticide transfer and concentration in aquatic and terrestrial communities. Rudd is very skillful in bringing together a fascinating array of information to document the phenomenon of "biological concentration" which is possibly the most serious and widespread problem introduced with the use of chemically stable pesticides.

It is perhaps inevitable that this book will be compared to the late Rachel Carson's "Silent Spring." A comparison is not easily made, however, since the audience of each author is quite different. Silent Spring was supported by years of scholarly research but did not include the use of citations within the text. This allowed Miss Carson to use a more free-flowing style of presentation aimed at the widest possible audience. Silent Spring was a unique literary polemic, whereas "Pesticides and the Living Landscape" is a relatively dispassionate examination of the evidence now at hand. Indeed, at several points, Mr. Rudd is so cautious in stating his conclusions as to cause some of us to squirm, wishing, as it were, that we might evoke a more positive statement from him. This is not to question the author's courage or convictions. He has plenty of both and makes his recommendations with force.

It is interesting in retrospect to see the change which the last few years have brought to the field of pesticides and the environment. Many of the ideas presented in Silent Spring, which were so hotly contested at the time, now appear in Mr. Rudd's book more in the vein of accepted fact than in controversy.

A comparison of the content of Pesticides and the Living Landscape and Silent Spring readily convinces one of the speed with which this field is moving and emphasizes the need for a fresh statement of material now at hand. Indeed, with a press deadline of September 1963, Mr. Rudd, like Miss Carson before him, has missed by a few months the appearance of material which would have dramatically fortified his discussion of pesticide residue concentration in food chains. The effect of DDT in knocking out reproduction in New York's Lake George lake trout is a case in point. The growing evidence that our own national symbol, the Bald Eagle, is a likely victim of the same phenomenon would also have made a very interesting contribution to Mr. Rudd's discussion.

In criticism of Pesticides and the Living Landscape, I have no broad comments to make. I like the wide scope which the author has given to this work; he clearly states the pre-suppositions which are the foundation of his recommendations. He is cautious in treating objective material and realizes when he is making subjective judgments. In a more detailed examination, a check of the citations in the last half of the text against the references cited revealed no discrepancies. In twenty references pulled at random from the bibliography and checked against original journal entry, only one insignificant typographical error was detected. The only error in reference interpretation which I noted occurred in a citation wherein Rudd implies that lichens are the principal food of lemmings in the Alaskan Arctic. To my knowledge, neither the brown nor the collared lemming makes any significant use of lichens for food. The point is a small one, however, and does not subtract from the validity of the author's use of this otherwise excellent example.

Moving to the more subjective matter of literary style, Rudd's writing is for the most part pleasing and varied; however, he occasionally lapses into muddy sentences and in one instance (page 179) employs a run-on sentence which keeps the reader on edge for thirteen lines. Furthermore, he tends to very much over-use the word "moreover" to the

near exclusion of other connectives. The author's choice of words is also sometimes puzzling as in the response to rhetorical questions on page 178: "Are we producing 'biological deserts'? Yes; pest control, where it *assists* in simplifying habitats, *accomplishes* these things" (italics mine).

These are small and carping complaints on what is over-all a handsome scientific work. We are deeply indebted to Mr. Rudd for bringing his experience and scholarly industry to bear upon a problem which is so vital to us all. The closing chapter "Retrospect and Prospect" is a summary of his point of view and a forceful charge to all conscientious citizens on the problems of pesticides in our environment. Everyone interested in wild-life conservation will find this book to be stimulating and very rewarding reading.—  
DANIEL Q. THOMPSON.

---

CHECK-LIST OF BIRDS OF THE WORLD. A continuation of the work of James L. Peters. Volume 10. Edited by Ernst Mayr and Raymond A. Paynter, Jr., Museum of Comparative Zoology, Cambridge, Mass., 1964: 6½ × 9¼ in., ix + 502 pp. \$10.00.

In my review of Volume 9, the first of the "post-Peters" volumes of this check-list (1960. *Wilson Bull.*, 72:415, 416), I emphasized the importance of the series as a basic reference work in ornithology. I reemphasize this point now, with the appearance of Volume 10, for an excellent reason. The "Check-list of Birds of the World" is a publication project, now nearing completion, which merits the support of all ornithologists, whatever their specialties. No matter how critical we may be of matters of detail in individual volumes (as I shall be, below), it is to our best interests to have available a complete, up-to-date list of the avifauna of the world. The nontaxonomist can use it as a guide to the names of the birds he is studying; the taxonomist can use it as a jumping-off place for controversy. This would seem so self-evident as to be a waste of space to repeat, but I am informed by the editors that the sales of recent volumes of the Check-list have been far below expectations. It is true that, for many nontaxonomists, a set of "Peters" might appear to be an unjustifiable *personal* expenditure, but we should all certainly see to it that our *libraries* purchase the volumes as they appear. Dr. Mayr writes me, however, that surprisingly few libraries subscribe to the set. I find this both shocking and puzzling. It is quite possible that some potential purchasers, both individuals and libraries, have hesitated to buy current volumes because of unavailability of some of the earlier volumes, making the assembling of a full set a matter of paying premium prices to secondhand book dealers. This drawback has been remedied, and all but one of the "out-of-print" volumes are being reprinted. The sole exception is Volume 1, of which a revised edition is in preparation. The Check-list is financed through a revolving fund, so the appearance of the remaining volumes rests in large part on sales of those now in print. I urge those readers of *The Wilson Bulletin* who do not wish to buy personal copies of the Check-list of Birds of the World to recommend purchase of a set by their institutional or local libraries. And should the price of these volumes seem high, I strongly recommend reading the article entitled "Scientific Publishing," by Tinsley Crowther (1964. *Science*, 144:633-637).

Let no one misunderstand; I do not take this position because I believe the Check-list to be perfect and its authors infallible, so that nontaxonomists may take its classifications and its statements of distribution as being the last word. Far from it. But the usefulness of the work as a whole so far outweighs the importance of the presence in its pages of errors of fact or judgment that its completion should be encouraged in any way possible. The authors and editors of this check-list receive no pay or royalties for their work on the project, and deserve our support and our gratitude.

We turn, then, to Volume 10. It is the product of only three authors, in contrast to the eleven represented in Volume 9 and the six in Volume 15. The "chapters" on the accentors (Prunellidae) and thrushes (Turdinae) were prepared by S. Dillon Ripley; the logrunners (Orthonychinae), babblers (Timaliinae), parrotbills (Panurinae), picathartes (Picathartinae), and a group of "genera sedis incertae" by Herbert G. Deignan; and the gnatcatchers and their allies (Poliptilinae) by Raymond A. Paynter, Jr. The latter author, in an addendum, also covers the genus *Psilorhamphus*, which Peters had intended to include with the Sylviidae but which is now believed to belong to the Rhinocryptidae (already covered in Volume 7).

It is well known that the editors of the present volume favor the concept of a huge family Muscipidae, to include all of the so-called "Old World insect eaters" (thrushes, Old World warblers, Old World flycatchers, babblers, etc.). This shift upwards by one taxonomic rank in the hierarchy has had some odd side effects in the present volume. For one thing, the family name Muscipidae does not appear on the title page, so that it might well appear to the uninitiated that the Turdinae, Timaliinae, etc., are all considered subfamilies of the Prunellidae, the first name on the list and the only family name given. The thrushes (Turdinae) are not further subdivided (although, as mentioned earlier by Ripley [1952. *Postilla*, no. 13], there appear to be at least two natural subgroups of thrushes). This places the thrushes as a whole at the same taxonomic level as each of a number of groups usually placed one level below. Delacour (1946. *L'Oiseau et la Rev. Fr. d'Orn.*, 16:7-36), for instance, recognized six "tribes" within the Turdinae, also placing at the tribal level the gnatcatchers and the parrotbills, which each have full subfamily rank (thus equal to the thrushes as a whole) in the present Check-list volume. The gnatcatchers and their allies have always been placed among or adjacent to the "Old World warblers"; the AOU Check-list, for instance, lists three subfamilies of Sylviidae in the sequence Sylviinae, Polioptilinae, Regulinae. This is not to argue that the AOU sequence is correct, but to suggest that the Polioptilinae might more logically and conveniently have been included in the next volume, which will presumably contain the rest of the "Old World warblers."

This volume includes several genera of birds whose taxonomic affiliations have been the subject of debate. When birds have been shifted about at the family or subfamily level, it would have been useful for many readers to have a footnote mentioning this fact, even though the author may believe the matter is settled once and for all. For example, Ripley includes among thrushes the genera *Erythropygia*, *Namibornis*, and *Zeledonia*; footnotes might have explained that certain other standard references place these genera in the Old World warblers, the Old World flycatchers, and a monotypic family, respectively. One of the most puzzling of oscine genera, *Picathartes*, is given a subfamily to itself (thus, again, making it the hierarchal equivalent of all of the thrushes put together), while in what is to me a new departure in such a check-list, Deignan admits frankly that he is baffled by the genera *Malia*, *Myzornis*, *Horizorhinus*, *Oxylabes*, and *Mystacornis*. These are grouped together as "genera sedis incertae," but are sandwiched between the Timaliinae and the Panurinae, which would seem to imply at least some notion as to their "sedis." This solution, although unorthodox, is perhaps preferable to elevating problem genera into monotypic subfamilies as with *Picathartes* (and *Pityriasis* in Volume 9).

This volume differs in several respects from the first two "post-Peters" volumes. Those were published in Denmark, while with Volume 10 the entire manufacture has been returned to the United States. Although the Danish printers did an excellent job, Dr. Paynter informs me that duty and transportation costs more than offset the saving effected

by somewhat lower printing costs in Denmark, and the convenience of using a printer near at hand is obvious. The type in Volume 10 is a larger size than that used earlier; as a purely subjective judgment, I find the new typography no more readable and rather *less* attractive to the eye. There have been several changes in typography since this series began in 1931; I personally find that used in Volume 7 (1951) the most pleasant. The binding of Volume 10 is a distinct improvement from the standpoint of durability. It is a strong unadorned library buckram with rather stark lettering on the spine; Volume 10 is thus, amusingly, "pre-rebound," being an excellent match for those earlier volumes which have been rebound in heavy cloth by many libraries.

The controversial use of English vernacular names for some but not all species, instituted in Volumes 9 and 15, has been abandoned completely, following the advice of ten of "the twelve authors of this and forthcoming volumes." This represents a complete reversal of position from that expressed in the introduction to Volume 9, which states that "the majority of the collaborators and the editors felt that the inclusion of the English name added sufficiently to the usefulness of the volume to compensate for the inevitable criticism." Some will regret the decision to drop the use of English names; my own position, expressed in reviews of the two previous volumes, was that such names should be used for all species or none. The editors opted for the latter, and in view of the amount of work involved in getting out this check-list *without* having to arbitrate an English name for every species, I find myself completely in sympathy with their decision.

This volume well illustrates one of the problems of multiple authorship. There are distinct differences among the authors in taxonomic approach, style, treatment of details, thoroughness, and accuracy. There is space to mention only a few. Paynter places question marks, without explanation, before the names *Polioptila caerulea gracilis* and *P. plumbea cinerica*, presumably because he is not convinced as to the validity of these races but lacks sufficient evidence to synonymize them. Deignan also uses question marks, but is explicit as to his misgivings; thus *?Babax waddelli lumsdeni* Kinnear is "doubtfully distinct from *waddelli*." One variation in treatment brings up a policy question: in citing type localities, should old geographic names be given verbatim, or changed to accord with current usage? For example, on page 258 Deignan cites the type locality of *Dryococcyz cleaveri* Shelley, 1874, as "Fanti region, Ghana." There was, of course, no such political entity as Ghana in 1874; the locality was given by Shelley simply as "Fantee." I believe that the reader is entitled to know just what identification or restriction of type locality has been made by a Check-list author, and I favor the treatment employed by Paynter, in which the original type locality is given verbatim, with explanation in square brackets. Thus, on page 449, Paynter cites the type locality of *Polioptila caerulea cozumelae* Griscom as "Isla Cozumel, Yucatán [= Quintana Roo], Mexico."

Another point having to do with geography may be noted here. Deignan not uncommonly gives the range of a form in terms of political subdivisions or local regions without mentioning the name of the country, or islands without mentioning their archipelago. As an example of the latter, on page 322 the range of *Macronous gularis ruficoma* is given simply as "Bangka and Billiton." The words "off Sumatra" should be added not only to orient readers not familiar with the geography of southeast Asia, but also because there is another Bangka Island north of Celebes. Many readers will be hard put to remember that Tongking is in Vietnam, not in China, or that Manipur is in India rather than in Burma or Pakistan. Incidentally, I certainly cannot fault the editors for not having been able to monitor consistency in spelling of geographic names; I note that Ripley (cf. page 159) uses the spelling "Tonkin" for what Deignan (cf. page 373) calls "Tongking." Deignan frequently adds, in square brackets, the latitude and longitude of

type localities. This is a distinct service, although he has performed it rather inconsistently; thus on page 344 he provides the coordinates of Mombasa, Kenya, one of the most important port cities of Africa, while on the same page he fails to locate for us Ali Amba, Ethiopia, which I am unable to find in the excellent *London Times* "Atlas of the World."

In this volume, as in Volumes 9 and 15, a footnote at the beginning of each family or subfamily lists ornithologists by whom that portion of the Check-list was read in manuscript. Volume 10 is the first in which my name appears among these; I read all manuscripts except Ripley's on the thrushes. Corrections and suggestions based on such readings are turned over to the authors by the editors, and the degree of attention paid to these lists seems to be highly variable. To give but one small example, the misprint on page 326, "Mount Lobu" for Mount Lobi, appeared in the manuscript which I read, and I duly called attention to it, but it has been perpetuated in the published version. The user of the Check-list unfortunately cannot know either with what degree of care (or finicalness, if you prefer) each "reader" performed his volunteer task, or to what extent the resulting corrections and suggestions have been utilized.

The introduction to the present volume summarizes the editors' concept of the scope of responsibility of editors and authors, respectively, of this check-list. Conspicuously absent from this discussion is the subject of nomenclature, in its legalistic aspect. There has been much inconsistency of treatment here. The editors have allowed the author to have his own way, presenting their opinion in a dissenting footnote (Panurinae vs. Paradoxornithinae, page 430); they have overruled the author but permitted *him* a dissenting footnote (*Horizorhinus* vs. *Cuphornis*, page 428); or they have changed the author's usage (known only to those who have seen the manuscript) *without* including any such written dissent (*Pnoepyga* vs. *Microua*, page 293). The latter case is an especially interesting one, as the editors cite Opinion 695 [of the International Commission on Zoological Nomenclature] as the authority for rejecting as a nomen oblitum the earlier name *Microua*. Although Opinion 695 was signed on 12 June 1963, it was not published until 25 March 1964 (*Bull. Zool. Nomen.*, 21:33), eight days *after* the publication of this volume of the Check-list! However, this case is obviously one about which the senior editor felt strongly, to the extent that he permitted himself to characterize authors expressing a legitimate preference for strict priority in this and similar cases as advocating "nomenclatural anarchy" (1963. *Bull. Zool. Nomen.*, 20:17), a patently absurd charge.

In sharp contrast to this scrupulous devotion to certain provisions of the "International Code of Zoological Nomenclature" is the ignoring of the principle of "once a homonym, always a homonym" applicable to all names rejected as secondary homonyms prior to 1960 (see Articles 59 and 60 of the Code). For example, see *Zoothera dauma major* on page 157. Ogawa named this form *Geocichla major* in 1905. In 1922, Hartert considered it a subspecies of *dauma*, and did not consider *Geocichla* separable from *Turdus*. He therefore renamed Ogawa's form *Turdus dauma amami*, as there was an earlier use of the name *major* within *Turdus*. Ogawa's name *major* was thus rejected as a secondary homonym long before 1960, so subsequent authors, no matter where they may place this form generically, are required by the Code to use the name *amami* Hartert for it. Now, it happens that neither Dr. Ripley nor I favor this provision of the Code. An unsuccessful attempt was made to overthrow it at the International Congress of Zoology in Washington in 1963, but it remains in force. I happen to believe that one cannot ethically be selective in adhering to a code of laws or rules. If we agree to abide by an "International Code of Zoological Nomenclature," we agree to all of it, not just the parts that do not clash

with our own preferences. The senior editor of this volume of the Check-list is a member of the International Commission on Zoological Nomenclature, so it seems somewhat surprising that such careful attention was paid to the provisions of Article 23b of the Code (relating to "nomina oblita" as in the *Microura* case), which are also unpopular with many taxonomists, while Article 59 was slighted.

Within the thrushes, I have the impression that some of the work of compilation may have been done hastily. There are several discrepancies within range descriptions, for example. On page 93 the range of *Myadestes leucogenys gularis* is given simply as "British Guiana," whereas it has been known from Venezuela for years, appearing in the standard literature (Phelps and Phelps, 1950. *Bol. Soc. Venez. Cien. Nat.*, 75:248). On page 216 the range of *Turdus l. leucomelas* as given omits Argentina; this form is found in Misiones (Olrog, 1959. "Las Aves Argentinas": 261). On page 150 *Zoothera naevia meruloides* is stated to breed in northwestern Montana, and in the same paragraph is called "casual in Montana." The latter phrase probably refers to winter status, but the punctuation of the paragraph makes it read otherwise. On page 113 two subspecies of *Saxicola caprata* are attributed to the island of Cebu (possibly because in my original description of *S. c. randi* I stated that I could not identify subspecifically the single Cebu specimen available). The new subspecific names proposed by Phillips (1962. *Anal. Inst. Biol. México*, 32 [1961]:351, 356) in the species *Catharus guttatus* are duly entered in synonymy (pages 173-174), but the subspecies recognized and the ranges given for them conform suspiciously closely to the treatment of the 1957 AOU Check-list. I do not believe Ripley could have given full consideration to some of Phillips' proposals, such as the synonymizing of *C. g. polionotus* with *auduboni*, with which I am thoroughly in accord after having examined specimens.

There is, in this volume, the inevitable sprinkling of typographical errors. I do not propose to list all of these that I have found, as some involve English words and will be apparent to any reader. In other cases, however, the error will be less obvious, and I have found from long experience that errors in standard references of this type tend to be perpetuated in later publications. Readers may wish to correct in their copies the following errors, typographical and otherwise.

Page 73, lines 18-20—the type locality restriction of *Cittocincla cebuensis* was made by Steere (1891. *Ibis*:314), not by Bourns and Worcester, 1894, as given.

Page 113, line 19—for Siguijor read Siquijor.

Page 136, line 3—for 1938 read 1838.

Page 166, lines 21 and 22—for Gines read Ginés.

Page 166, line 36—the spelling used by Zimmer was San Augustin.

Page 170, line 20—for **fuliginosa** read **fuliginosus**, to agree in gender with **Catharus**.

Page 194, line 28—for page 227 read page 277.

Page 210, line 28—for Tetaré read Tetarí.

Page 225, line 19—*rufopalliatus* was not hyphenated in van Rossem's original description of *grisor*.

Page 308, line 33—Salomonsen's paper, although dated "1961," did not appear until 1962.

Page 447, line 10—for Solimóes read Solimões.

Page 447, line 27—for Baiáo read Baião.

Page 454, line 23—for *paraensis* read *paraënsis* (original spelling).

As has been my custom in these reviews, I present below for the convenience of any interested readers a summary of the differences (except those of sequence) between the taxonomic and nomenclatorial treatment in Volume 10 of the Check-list of Birds of the

World and that in the AOU Check-list. The present volume departs from AOU usage as follows:

1. *Prunella montanella* is considered monotypic, the race *badia* of the AOU Check-list not being recognized.
2. The family Turdidae is reduced to a subfamily of Muscicapidae.
3. The genus *Luscinia* is considered inseparable from *Erithacus*. Further, no races are recognized of the Ruby-throat, so *Luscinia calliope camtschatkensis* of the AOU Check-list is called simply *Erithacus calliope* by Ripley.
4. *Ixoreus*, the Varied Thrush, is considered inseparable from the Old World genus *Zoothera*.
5. *Hylocichla* is retained as a monotypic genus for the Wood Thrush only, the other four species being transferred to *Catharus*.
6. *Catharus fuscescens subpallidus* (Burleigh and Duvall), described since the AOU Check-list was published (1959. *Proc. Biol. Soc. Washington*, 72:33), is accepted.
7. Ripley follows the revision of Swainson's Thrush by G. Bond (1963. *Proc. U. S. Natl. Mus.*, 114:373-387), so that *incana* Godfrey is considered a synonym of the revived *almae* Oberholser, and *clarescens* Burleigh and Peters a synonym of *swainsoni* Tschudi; *Catharus ustulatus oedicus* (Oberholser) is revived as a valid race.
8. The name *musicus* having been placed on the "Official List of Rejected and Invalid Names in Zoology," the Red-wing becomes *Turdus iliacus*.
9. *Turdus confinis* is considered a subspecies of *T. migratorius*.
10. The wren-tits, *Chamaea*, are placed within the subfamily Timaliinae of the family Muscicapidae rather than as a separate family Chamaeidae.
11. The gnatcatchers are placed in a subfamily Polioptilinae of the Muscicapidae rather than as a subfamily of the Sylviidae.—KENNETH C. PARKES.

---

BIRDS OF THE NEW YORK AREA. By John Bull. Harper & Row, New York, New York, 1964: 5½ × 8½ in., xiv + 540 pp., numerous line drawings and maps. \$8.95.

Perhaps no area in the United States has been subjected to such constant and careful ornithological surveillance as the New York City region. As a result, no less than five studies on the subject have been published in the past seventy years. This long-awaited successor to Chapman ("Visitor's Guide to the Collection of Birds," 1894, and "The Birds of the Vicinity of New York City," 1906), Griscom ("Birds of the New York City Region," 1923), and Cruickshank ("Birds Around New York City," 1942) is the finest by far.

This is a monumental gathering and assimilation of information from a thousand sources, the earliest to the most recent (late 1962). The author set out not merely to update Cruickshank, but to go back to local beginnings and completely re-evaluate the data. In the course of five years of preparation, he examined over 20,000 specimens from almost every collection with birds from this area, discovering in the process many apparent errors and also many unpublished data of merit. In addition, he reviewed all the published data of the past, questioning many long-accepted records; to this he has added the sizable accumulation of the last twenty years. It is all here, weighed and sorted out into useful analytical information that will be a mandatory reference work for students for the next generation, a lasting historical record, and, it is hoped, a tremendous spur to further investigation of the many unsolved problems that are so ably revealed.

The major part of the book (415 pages) is devoted to the detailed species accounts—



the annotated list. But useful introductory chapters include a history (with emphasis on local collections), a brief guide to local bird-watching sites, a summary of ornithological trends since 1942, a discussion of breeding species, local migration, qualitative standards (the acceptance of records) and quantitative data (standards of abundance and frequency), an excellent summary of the effects of recent hurricanes, and a brief discussion of subspecies. Appended are a glossary, a 17-page bibliography, a gazetteer, and an index.

The species accounts are organized under the headings of "Range" (specieswide), "Status" (local), "Change in status," "Migration," "Occurrence and maxima" (including discussion of breeding when present), and "Remarks." Headings are not inviolate; accidental and introduced species are handled somewhat differently, but in every case the information is easily available. Treatments vary in length according to need: the single record of the Eurasian Curlew takes just four lines; the history of the recently introduced House Finch, five pages. For many species of changing status the treatment is a historical summary, often with breeding-site maps and tables showing population changes.

Bull has aimed his book at a more sophisticated audience than his forerunners, and whenever there are interesting problems of taxonomy, identification, distribution, or population, a thorough discussion is presented, often brilliantly. Thus three pages are devoted to the fascinating Traill's Flycatcher complex, and an equal space to the hybrid warblers.

"Birds of the New York Area" is not without its faults, but they do little to detract from the over-all merit of the work. The title itself seems less than perfect, since there is a state, city, and county named New York. In his introduction, Bull re-defines a number of ornithological terms without really improving the situation. In the bird-watching guide, several excellent areas, such as Fire Island, Hecksher Park-Carman's River, and most of Westchester County are omitted. In the chapter on breeding birds, the author changes the traditional faunal zone names of Canadian, Transition, and Carolinian to Northern, Neutral, and Southern, all three of which are the kind of meaningless comparatives he himself decries in the name "Common" Egret. (Actually *Transition* is exactly the right word for a region of overlap.)

Bull has departed from the 1957 AOU Check-list by altering the sequence in the case of the teal-shoveler complex and the phalaropes, by changing the vernacular names of four species (Common Egret to Great Egret, Common Teal to Eurasian Teal, Common Scoter to Black Scoter, and Wood Ibis to Wood Stork), and by altering three scientific names. Apparently unintentional is the switching of sequence of the two local bitterns, of the Ruff and Sanderling, and of the Gray Partridge and Ring-necked Pheasant.

It is in the species treatments that the author will probably be most criticized, for many local observers will unfortunately judge the book on the number of their own prized records that are missing. Bull has set rigid standards of admissibility, and the requirement of three able observers per sight record has doubtless ruled out some valid records. Unfortunately, he does not always maintain his own criteria; certain favored experts seem to have a blanket cachet while others have been roughly handled.

As for specific disagreements, every conversant reader will find his own. My copy has notations inserted at more than 80 places thus far. Some of them read, "Location in pond no reason to reject Barrow's Goldeneye record; often found in small ponds in West." "Why not more discussion of status and identification of scaups?" "Ruffed Grouse status not very edifying." "Whip-poor-will distribution seems vague." "Estimate of one million Herring Gulls wintering probably 5 times actual total. Recent combined Christmas count was 125,000." "Why not data on annual waterfowl count for area, first taken 1939 and full of interesting comparative data?" "Rye Purple Martin colony to 1941 only. It is

still extant." "Why not much more banding data?" But these are minor questions against a major and important success.

The book is typographically excellent. I noted a few minor errors, including the misspelling of *Puffinus diomedea* (page 77). The drawings of Cornelius Ward (except for a strange Oystercatcher) are decorative, and the end-paper map and breeding distribution maps of Richard Edes Harrison are clear and accurate.

One rather disappointing feature of the book is the forward by Roger Tory Peterson, in which once again the fame of the Bronx County Bird Club is expounded. According to Peterson, this book, like its two immediate predecessors, is a direct product of that briefly active, now defunct coterie. The truth is that while several members of the group did go on to fame and fortune, the group had nothing to do with either Griscom's or Cruickshank's book, and Bull was never even a member. Conversely, the organization that Peterson should credit is the Linnaean Society of New York where the group actually sat and learned with the old masters. The two books mentioned above credit the Linnaean Society on their title pages, as should the present work, for without the endorsement, aid, advice, encouragement, editing, and cooperation of the Linnaean Society and many of its members, Bull would never have written his book at all. The fact that nowhere does he or Peterson acknowledge it is lamentable.—ROBERT S. ARBIB, JR.

---

A DISTRIBUTIONAL STUDY OF THE BIRDS OF BRITISH HONDURAS. By Stephen M. Russell. American Ornithologists' Union, Ornithological Monographs No. 1, 1964: 195 pp., 2 col. pls., 16 photos, 1 map. \$4.50 (\$3.60 to members of the A.O.U.).

This is an important publication as it represents the first comprehensive account of the birds of British Honduras and the first of a new monograph series sponsored by the American Ornithologists' Union. The book covers investigations by the author from 1954 through 1963, including data gathered during a total of 13 months in the field over an eight-year period. These studies were also the subject of Dr. Russell's Ph.D. dissertation, a fact of which their thoroughness is indicative.

"British Honduras [or Belize, as it is called by most Spanish-speaking Central Americans] is a Crown Colony of about 8,600 square miles situated at the southern base of the Yucatan Peninsula. . . . It is bounded on the north by Mexico, on the west and south by Guatemala, and on the east by the Caribbean Sea. It includes numerous small keys. Tall tropical forests predominate on the mainland, which is relatively low. . . . The only mountainous area has maximum elevations of 3,700 feet. . . . Mangroves, wet savannas . . . , pinelands, and 'rain forests' are the principal vegetational formations. . . ." It is surprising that this small, English-speaking, accessible tropical country has not previously been the subject of a comprehensive report. W. E. C. Todd and (later) J. Van Tyne had such a project in mind and amassed collections from the colony, but their diverse interests prevented completion of the work. Other well-known ornithologists and collectors have worked in British Honduras and published on their material, but it remained for Russell to assemble all the previous data and supplement these by his own efforts to produce the present volume.

The book is virtually a model of compact organization and thoroughness in a distributional study. An introductory section includes a resumé of all ornithological investigations in British Honduras, a complete, detailed gazetteer of localities, a map showing 93 of the most important of these, and a brief summary of the topography, geology, climate, and vegetation. The life-zone system of Holdridge (1947. *Science*, 105:367-368) is followed except that "rain forest" is used in accordance with popular rather than special

(annual rainfall  $> 8,000$  mm) usage, and there are 16 habitat photographs. The species accounts, 465 in all, occupy pages 32 to 185. As these constitute the bulk of the work, their plan is worth comment. A family heading is included. Each account is introduced by the scientific binomen (those not documented by a specimen are in brackets) followed by an English vernacular name. The latter corresponds to that used in the fifth edition of the AOU Check-list if the species is included in it; otherwise, Eisenmann (1955. *Trans. Linn. Soc. N.Y.*, 7:vi + 128 pp.) is usually followed. Summarized information (locality, sex, date, and weight in grams) is given for all specimens collected by the author and his associates and deposited in the Louisiana State University Museum of Zoology. For specimens in other museums, locality and month are the only data given; a "Critical Published Record" is cited for specimens recorded in the literature from additional localities. The annotations include summaries of the birds' distribution and seasonal occurrence within British Honduras, the major habitat preferences, data on reproductive season, estimates of relative abundance, and comments on natural history if these are supplementary or contradictory to previously published information. The subspecies as determined by the author is given for each polytypic species, accompanied by a discussion when pertinent. Following the species accounts there is a brief (5 pages) "Discussion and Conclusions" section and a complete bibliography. There is no index. Two fine color plates by Eckelberry—the Ocellated Turkey (frontispiece) and three grassland-inhabiting passerines—are included.

The relatively slight variety in topography and habitat in this small area does not support a highly distinctive or much-differentiated avifauna. The discussion section calls attention to those forms whose affinities seem to be with populations occupying the drier parts of the Yucatán peninsula, the Caribbean slope "rain" forest, and the montane forests of Central America, or the West Indies. Among the colony's habitats, only the pine ridges and lowland pine savannas are isolated to any important degree from other similar regions. There are very few endemic forms, only rarely does more than one subspecies of a given species occur within the borders of the colony, and very few forms reach the limits of their range there. This situation is not one to encourage sweeping zoogeographic generalizations, and the author has limited his discussions accordingly.

In a distributional work that packs so much information into a small amount of space, one finds little to criticize except relatively trivial matters. A few of the habitat photographs are not very clear; neither is the exact meaning and use of "Critical Published Record" in the species accounts. I would have preferred more of the vernacular names proposed by Eisenmann (op. cit.) and fewer of those drawn from Ridgway or Hellmayr. An editorial criticism is that space is used unnecessarily in the bibliography by including a complete and separate listing for each cited volume of Ridgway, Hellmayr, Peters, etc.—surely a more economical way of referring to series publications could be devised.

In summary, this is a very careful and thorough account of the avifauna of a relatively neglected portion of Central America, and its usefulness extends considerably beyond the borders of the area with which it deals. Both author and publisher are to be congratulated on a fine first effort.—THOMAS R. HOWELL.

---

A FIELD GUIDE TO THE BIRDS OF EAST AND CENTRAL AFRICA. By John G. Williams. Houghton Mifflin Company, Boston, 1964:  $5\frac{1}{4} \times 7\frac{3}{4}$  in., 288 pp. incl. 1 map, 44 pls. (16 col., 24 bl. and wh.). \$6.00. (Except for a different title page and differently colored dust jacket and binding, this edition is identical to the 1963 Collins edition printed in Great Britain.)

Anyone who has worked in eastern Africa, weighed down by the two hefty volumes of Mackworth-Praed and Grant ("African Handbook of Birds," Series I) and/or the three larger classics of Jackson and Sclater ("Birds of Kenya Colony and the Uganda Protectorate"), can appreciate the need of a field guide to the avifauna of this exciting part of the world. Mr. Williams' "Guide" is a very welcome addition to the safari paraphernalia of anyone interested in birds. It will slip readily into the pocket of a bush jacket (but not in one's hip pocket; it is bigger in all dimensions than our Peterson "Field Guides").

In 1963, I had a bound copy of the page proofs of the text available to me in the field. It was evident that had such a volume been available on my first trip to East Africa two years earlier the business of identifying birds would have been very much easier. At that time, although I had devoted several months of concentrated effort to the study of all available literature pertaining to identification, I found myself puzzled by not a few species when I first saw them alive. My great reliance on Mackworth-Praed and Grant with their abundant (but sometimes misleading) colored plates had failed to prepare me adequately. Although these plates depicted a great many species, they failed to illustrate a number of the *common* birds which the visiting bird student is almost certain to encounter—the Striped Kingfisher (*Halcyon chelicuti*), Klaas' Cuckoo (*Chrysococcyx klaas*), Bearded Woodpecker (*Thripias namaquus*), Common Puff-back (*Dryocopus cubla*), White-breasted Tit (*Parus albiventris*), Red-collared Widow-bird (*Coliuspasser ardens*), Bronze Manakin (*Spermestes cucullatus*), and doubtless others. Perhaps the chief benefit of the Williams Guide to serious bird students visiting Africa for the first time is in having the readily seen species treated in detail and illustrated, for these serve as points of comparison for the many other forms dealt with by Mackworth-Praed and Grant. The latter volumes, incidentally, will remain indispensable, for the scope of the Williams book is limited. It treats about 780 species, only 459 of which are accorded separate accounts; the remainder are very briefly discussed under included paragraphs dealing with "allied species." (Mackworth-Praed and Grant, by comparison, devote over 1,900 pages to all 1,487 species recorded from eastern Africa.) This, the most obvious shortcoming of the book, is pointed out by the author himself in the preface. A complete one-volume work on the birds from southern Mozambique to Eritrea would be no "field guide" to fit in one's pocket. Even for Kenya alone, with over 1,030 full species, a single Peterson-type volume would be impractical. The author's original plan (which we hope will be followed to completion) was to produce this initial guide to the species most likely to be seen by the bird-watcher, and a second, companion, volume treating the less common and more secretive birds.

With a single book treating only certain species, one would, of course, be liable to misidentify some birds. For example, a user of the present volume in Kenya or Uganda, with no other source of information available, would be forced to consider any black-headed oriole as *Oriolus larvatus*. However, there are places there where one would see only *Oriolus brachyrhynchus*, and another species, *O. nigripennis*, could be found in still other areas. Distinguishing these three orioles high in the forest trees is not always easy. In fairness, it must be stressed that nine out of ten binocular-wielding visitors to the usual East African tourist areas will see only *Oriolus larvatus* and not the other two. Nevertheless, I think it unfortunate that these species could not at least have been mentioned by name so that an observer would be aware of other possibilities.

A typical species account begins, under the heading "Identification," with an average measurement in inches, a brief description including major field marks and useful comments on habitat, abundance, gregariousness, etc., particularly helpful because each bird is compared with certain other similar species in these respects. Also, there are frequent

references to unusual or distinctive behavior such as the wing-flicking of the Olive Sunbird or the nocturnal habits of the Violet-tipped Courser. Following Identification is a line or two on "Voice" and a statement on "Distribution and Habitat." The species account is terminated by an often lengthy "Allied Species" section where certain related species are discussed in varying detail. This is most useful, and is a unique feature in books dealing with East African birds. However, there is one difficulty. The "allied" species discussed in a given species account are not necessarily *similar* species insofar as the field observer is concerned. The Red-breasted Wryneck, *Jynx ruficollis*, for example, is discussed only under the Gray Woodpecker where it is unlikely to be found (save through a chance encounter) by the neophyte who is unaware that the peculiar-looking creature he's watching is a member of the Picidae. As with any field guide, of course, optimum usefulness is dependent upon the user's degree of familiarity with the book. Particularly with as rich an avifauna as that in tropical Africa, a prospective observer should read and reread the entire book, and carefully study its illustrations, before setting foot on African soil.

This volume adheres rather closely to the pattern of the Peterson Field Guide series of which it is a part. There is an introduction by Roger Peterson, a table of contents, list of illustrations, and a section on how to use the book. These, together with the preface, an adequate map showing all areas covered, and a good bird topography drawing, occupy the first 18 pages.

The illustrations are far more polished than those in some recent field guides to tropical birds, although I personally found them rather disappointing—particularly after having been so favorably impressed by the originals of some of the color plates which I saw in Nairobi a few years ago. These seem to have suffered in reproduction. The pictures in my two copies lack the richness and depth of color I remember in the originals; the figures are sometimes pale and not very realistic. The title page of the book states that the plates are "by the author and Mrs. R. Fennessy" but I have not been able to determine what the latter's role may have been in their preparation.

The black-and-white plates are less successful than those in color, and some passerines would be extremely difficult to identify from the figures alone (as, for example, the Silverbird and Fischer's Greenbul on Plate 29). The proportions of some figures seem incorrect, particularly in head and bill size. On Plate 29 the Yellow-vented Bulbul is depicted as larger than the Arrow-marked Babbler; actually the babbler averages nearly two inches longer.

Tighter arrangements of the figures and utilization of waste space could have resulted in one or two more species being illustrated on certain plates. However, the figures are large (an improvement over many plates in Mackworth-Praed and Grant) and the plates themselves uncluttered. In general, the illustrations are entirely satisfactory.

More careful editing would have helped in numerous places. There is some unnecessary repetition in the "Allied Species" sections of material presented just above it in the species descriptions (see the Cattle Egret and Mountain Buzzard accounts for examples). With more severe editing, resulting in condensation of the material, several additional species might have been included within the present number of pages. There is an odd and inconsistent use of the colon on many pages, this mark appearing where a semicolon would normally be used. *Jaçana* is spelled throughout without the cedilla. It is unfortunate that the plate headings were not more carefully checked. Among the conspicuous mistakes which should have been caught in editing (and which appear in both the 1963 British and 1964 American editions) are: "White-faced" instead of White-eyed Kestrel on page 61; the reference, opposite Plate 40, to page 274 for the Pin-tailed Whydah

account (which is on page 267); a similar erroneous reference opposite Plate 29 to page 18 for discussion of *Pycnonotus tricolor* (actually on page 192); transpositions of both captions and numbers for the Yellow Bishop and White-winged Widow-bird on Plate 39; an apostrophe in "Barbets" in the heading of Plate 24; and this same caption reappearing (without the apostrophe) in the midst of the caprimulgid text on page 156.

There are few typographical errors and the single factual error I find is of little importance. (The Yellow-whiskered Greenbul is said to be "always" identifiable by its yellow moustachial streaks. Full-tailed juveniles, however, lack these and can mislead an observer not familiar with the confusing array of African greenbuls.)

There are few departures from either the technical or vernacular nomenclature employed by Mackworth-Praed and Grant, and this will aid persons already used to the latter. I noted the following changes in the Williams Guide. The Dusky Nightjar (*Caprimulgus fraenatus*) is considered specifically distinct from the extralimital *C. pectoralis*. *Anthus richardi* is resurrected for Richard's Pipit, the author evidently (like this reviewer) being sceptical about this familiar African bird representing *A. novae seelandiae* of New Zealand. The genus of paradise-flycatchers is *Terpsiphone* (rather than *Tchitrea*). The Ground-scraper Thrush, *Psophocichla litsipsirupa* of Mackworth-Praed and Grant, is placed in *Turdus*. *Oenanthe lugubris* is called Schalow's Wheatear (after the race *schalowi*) whereas Mackworth-Praed and Grant treat it under the species name Abyssinian Black Wheatear. *Anthreptes orientalis*, the Kenya Violet-backed Sunbird, is here considered specifically distinct from *A. longuemarei*. (The Uluguru Violet-back, *A. neglectus*, is not treated in the Field Guide.) *Coliuspasser ardens*, the Red-collared Widow-bird, includes *C. laticauda* (the "Red-naped Widow-bird" of Mackworth-Praed and Grant), as well as the all-black form *concolor*, conforming with general current usage. The various yellow-vented and white-vented bulbuls (*Pycnonotus xanthopygos*, *P. dodsoni*, *P. barbatus*, and *P. tricolor* of Mackworth-Praed and Grant) are treated as conspecific under the name *Pycnonotus xanthopygos*, Dark-capped Bulbul. But if all four are to be united they should, I believe, be called *P. barbatus* (based on *Turdus barbatus* Desf. 1789; cf. Sclater, 1930. *Syst. Avium Aethiop.* II, 372). They are so considered by White's 1962 "Revised Check List of African Shrikes . . . Bulbuls . . . and Babblers." *Turdus abyssinicus* and *T. olivaceus* are considered together under the latter name (as in Mackworth-Praed and Grant) despite the treatment in Chapin (1953. *Bull. Am. Mus. Nat. Hist.*, 75A), and White (op. cit.).

American users of the Guide will of course notice certain differences in family limits and family names compared with the familiar Wetmore arrangement followed by most American works. The grebes are termed Podicipidae (instead of Podicipedidae). The vultures, under Aegyptiidae, are segregated from all other falconiformes (buzzards, falcons, accipiters, and osprey) which are placed in the Falconidae. Phasianidae includes the guinea fowls (Numididae), as in Mackworth-Praed and Grant. The crane family is called Balearicidae, not Gruidae; and that of the babblers Turdoididae (instead of Timaliidae). The buntings, Emberizidae, are kept distinct from the Fringillidae. Muscicapidae is reserved for the flycatchers, with the thrushes and warblers each accorded family status.

The Avocet and Black-winged Stilt are listed among the Charadriidae (as are references to the Oystercatcher and Crab Plover, but this may not imply any intentional broad lumping as these are treated only in the "Allied Species" sections). Rostratulidae is maintained for the Painted-snipe.

Owing to the numerous deviations from the Wetmore classification many readers will appreciate the adequate index. The sequence of families, like that in Mackworth-Praed and Grant, will be somewhat confusing to American readers. It takes time to learn that

the coraciiform families precede the owls, nightjars, and trogons; and that the swifts appear between the woodpeckers and the Passeriformes. And it will be no easier within the latter order where swallows come after the warblers, pipits follow the larks, and various other groups seem, to us, peculiarly disposed.

I have written this review primarily for those who have not yet enjoyed bird study in East Africa, but this book will benefit many who have already visited the region. One can learn from it many things not expected in a field guide—for example, that crabs constitute the main diet of the Giant Kingfisher, or that *Tmetothylacus*, the Golden Pipit, “is remarkable among the passerine birds in having the lower third of the tibia bare, as if it were a wading bird [and not in fact] an arid bush country species.” (Unless one is collecting, or has read about *Tmetothylacus* in “Jackson” he might remain unaware of this. Mackworth-Praed and Grant do not mention it.) Such inclusions may be no contribution to field identification, but they certainly add to the interest of the book.

It is easy to criticize an author for not including certain species, but no two persons would select exactly the same birds from a list of over 1,000 possibilities. I was somewhat surprised not to find any mention of *Prinia leucopogon*, *Apalis cinerea*, and *Cisticola hunteri*—all rather common or conspicuous species—but many exclusions were necessary under the proposed two-volume plan. The author has done an admirable job of selecting the forms most likely to be seen by the greatest number of persons—residents and tourists alike. There might appear to be excessive emphasis on those forms likely to be encountered in the Kenya highlands, at Amboseli and the Tsavo Park, or about Mombasa and Entebbe, but these are the areas visited by most foreign travelers and the species included are entirely appropriate for this book's intended audience. Mr. Williams has drawn on a long and intimate association with African birds to include precisely those comments on behavior, habitat preferences, and similar matters other than straight morphological description, that produce a truly useful and authoritative field guide. It should materially aid in stimulating interest in African birds.—DALE A. ZIMMERMAN.

---

THE WORLD OF THE RED-TAILED HAWK. By G. Ronald Austing. Living World Book Series, John Terres, Editor. J. B. Lippincott Co., Philadelphia and New York, 1964: 7¾ × 10⅝ in., 128 pp., 89 photos. \$4.95.

Austing's “World of the Red-tailed Hawk” is an extremely attractive book dealing popularly with one of North America's best known, most conspicuous, and wide-ranging hawks. It tells a highly sympathetic story of what has for so many years been widely referred to as the “Big Chicken Hawk”—a title highly undeserved, as the author points out. The Red-tail's world is a vigorous, competitive, cruel, and often gory world but for contrast the author points out the devotion of mated birds to each other and the gentle care taken of the tiny downy young. Mr. Austing sees, accepts, and thrills to this whole panorama and, as many naturalists do today, genuinely regrets to see the juggernaut of “Modern Man” rolling inexorably over the natural habitat, threatening to gradually eliminate the Red-tail from the American scene. With him we hope our conservation efforts will preserve large enough segments of forested America to retain such a striking bird in our fauna for at least a few more generations.

This is a book largely of personal experiences with ideas and suggestions based on the author's extensive field-acquired knowledge of the Red-tail's habits. It is not a compilation of factual data gleaned from a thorough search of the literature—it is not a compendium of tables on food studies of Red-tails or a critical examination of the manner in which Red-tail behavior varies from Florida to Alaska. Perhaps such broad coverage might

justifiably be expected from the rather comprehensive title given the book. However, I feel that the idea of the "world" of this bird is well carried out by the understanding way the author has attempted to present the hawk's life habits and requirements, not technically as an autobiography but sympathetically from the standpoint of the bird itself. The reader gets the feeling of knowing something of the thoughts and attitudes of an Ohio Red-tail as he looks over his domain from the top of some dead snag among the hills along the Whitewater River.

The format of the book is attractive and the 89 excellent photographs of not only the life history of the Red-tail itself, but of its prey, its habitat, its associates, and its enemies augment the text admirably. The reference list of only 12 titles includes some rather specialized articles and could have been expanded easily to include better general reading suggestions for the uninitiated. One is a bit surprised to find on page 91 a reference to a "Whippoorwill" found hibernating in California when the species concerned was the Poor-will. And Minnesotans will be a little disappointed not to find the Duluth hawk-pass referred to among the well-known concentration points of migrating hawks. In spite of these minor criticisms and the fact that the "world" is geographically somewhat limited, this book succeeds in giving the reader a vital, sympathetic view of this fine American predator.—W. J. BRECKENRIDGE.

---

This issue of *The Wilson Bulletin* was published on 1 April 1965.