

## RESPONSE: FURTHER COLLECTING OF BIRDS IN THE NEOTROPICS IS STILL NEEDED

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As I would judge from his reply to my Point of View on “The need to collect birds in the Neotropics” (Vuilleumier 1998) Donegan (2000) seems to have ambiguous feelings about the practice of “collecting birds.” On the one hand, he seems to agree with me, for example when he says that to collect specimens of apparently new taxa of birds is the right thing to do scientifically (as he correctly states, these specimens, the types, “remain an unarguable and long-lasting proof of the discovery [of the new taxon]”). Thus he and I appear to see eye to eye about the fact that the judicious collecting of specimens remains a valid way of doing ornithological science.

On the other hand, Donegan clearly does not like collecting birds and does not think that the practice of collecting birds is right: “I argue from a position where I consider that to kill is wrong.” This viewpoint, which he is perfectly entitled not only to have but also to defend, represents an ethical position, and thus one that I am not equipped to discuss or debate. My piece was written from my own position as a research scientist who was emitting a scientific viewpoint, not as a person engaging in a debate about whether or not to kill birds is justified on ethical grounds. Furthermore, my piece was published in a scientific, not a philosophical or ethical journal. To make my views about “killing” crystal clear, I

would like to mention that in this term I include several rather different kinds of activities that, I believe, can be grouped under three rubrics.

*Direct and purposeful killing.* This includes collecting birds for scientific purposes (for example sacrificing one or more specimens to be used as types for the description of a new taxon, and whether these are killed by shooting them or by injecting them with a lethal dose of an anesthetic after they were captured in a mist-net). Purposeful killing also includes shooting birds for non-scientific purposes, as a kind of sport for example. But note that whereas some kind of hunting is done for “pure sport” other forms of hunting have a practical goal and are aimed at providing subsistence food.

*First-level indirect killing.* This sort of killing is not purposeful yet it does result in immediate death. An example is killing birds when hitting them with one's car while driving at high speed on highways.

*Second-level indirect killing.* This sort of killing is not purposeful either but it does result in death eventually, which occurs after such activities as clear-cutting a woodland or draining a marsh in order to make way for the

development of new housing units (thus resulting in the disappearance of entire populations of several species).

At the end of my original piece I had suggested that a “good time and place to discuss the importance of collecting, the globalization of collecting, and the significance of collecting for conservation [would] be the next [VIth] Neotropical Ornithological Congress in Monterrey [Mexico]”. While writing his reply Donegan cannot have known, as I don't think he went to that meeting, that I chaired a 2.5-h Round Table discussion on “The Importance of Continued Collecting in the Neotropics” in Monterrey on 5 October 1999. Well attended by ornithologists from throughout the Neotropics and others from elsewhere, this gathering produced a surprising result, to me at least. I had expected some opposition from colleagues in the Neotropics to continued collecting of birds for scientific purposes. Instead the majority view was, first, that not only do we need more collecting there, but secondly, that these new collections should be made with the goal of enriching the already existing, but still insufficient, collections that are now housed in museums in the Neotropics. By insufficient was meant the incomplete representation of species, genera, and families as well as the inadequacy of series of specimens of given species, two kinds of gaps that currently impede further research by ornithologists resident in the Neotropics. I find this of interest, given the point made by Donegan that the specimens to be used as the types of the new species of *Lipaugus* that he and his colleagues are preparing for description are to be deposited in the Universidad Nacional de Colombia, where they “will be seen by only a handful of people.” Judging from comments made at the Monterrey Round Table this handful most likely cares very much about such specimens in their care. Indeed, the only real debate at the Monterrey Round Table was not about

whether one ought to collect further material, but, and it is a very different issue, about how ornithologists in the Neotropics who wished to collect scientific material should best work together with the local authorities in government and in conservation who deliver collecting permits in order to increase the often low limits now set upon collecting specimens. This need for improved collaboration between ornithologists and administrators stems from the fact, clearly stated by several participants in Monterrey, that the continuing collecting activity will not only increase pure ornithological knowledge about Neotropical birds (which is a good thing, they thought) but also and importantly will increase the amount of information that is crucial to conservation efforts. Hence I had the distinct impression that in the opinion of these colleagues, my “slogan” (a word used by Donegan) of: “No collection, no conservation,” was vindicated. Arguing for the important role of museum specimens in Chile, Torres-Mura (1999), who was not in Monterrey, independently made the point (my translation) that it was “necessary to promote the increase and the adequate maintenance of specimens in recognized national [Chilean] collections (like museums and universities).” He also emphasized the important relationship between careful scientific collecting, the increase in knowledge, and its significance for conservation.

Donegan stated that as I had not cited references about collecting in my piece, he would not do so either. I do not really wish to up the ante, but for the sake of readers who might not be aware of some of this literature, I cite in the references below the papers by Christidis (1995; with special reference to Australia), Winker *et al.* (1991; with emphasis on North America), and Remsen (1995; with special attention to conservation), in which the argumentation for further scientific collecting is well reasoned, lucidly presented,

cogently argued, and scholarly. Among the issues that these authors discuss are the mission of museum collections, how bird specimens are used, why collecting must continue, what the legal aspects of scientific collecting are, and what the sources of avian mortality are.

I will mention below seven points that I believe are worth stating (or re-stating) in the pages of this journal. In order to back up some of my earlier statements and others made here, I will give references to specific issues.

The description of new taxa of birds and for that matter of any other zoological group is governed by a set of rules established by the seven distinguished scientists who belong to the Editorial Committee of the International Commission on Zoological Nomenclature. The latest such document is a 306-page book (International Trust for Zoological Nomenclature 1999) whose “provisions ... supersede those of the previous editions with effect from 1 January 2000.” The discussion of types (what they are, why they are necessary, how they are designated, and how their nomenclature is established) occupies pages 63–87 of the book. All ornithologists, whether systematists or not, should read these pages to understand what types are (and are not) and why we have type specimens in zoology (including ornithology). The importance of types in zoology is outlined as follows (p. 79): “[Types] are the international standards of reference that provide objectivity in zoological nomenclature and must be cared for as such ... They are to be held in trust for science by the persons responsible for their safe keeping.” I refer the reader to a paper by LeCroy & Vuilleumier (1992), written with the goals of suggesting ways of describing new species of birds and of interpreting the crucial aspects of the code insofar as types go.

Whatever the code may actually say or

leave unsaid, and whatever new technology the future may bring, nothing can ever replace a type specimen or a series of type specimens deposited in a well curated museum collection. These types are the only available vouchers that now permit, and will do so in the foreseeable future, to verify that an alleged new species is indeed what its describers have said that it is. Evidence from other quarters (photographs, single feathers, or other tissues, including DNA sequences: see Townsend & Peterson 1992) does help but is not sufficient. In this connection it is interesting that Hugues (1992), writing about DNA evidence in avian systematics, said that “the more one gets, the more it seems one needs.”

The practice of collecting and trapping birds for scientific research is strictly regulated by clear-cut rules that are explained in detail in a publication edited by Gaunt & Oring (1997). The rules set out in this booklet are the standards by which all research on wild birds, whether collected or not, is now carried out in the United States. No United States federal granting agency will award research funds if the proposal has not been reviewed and approved by ad hoc committees whose mandate is to verify that the investigators are in compliance with these rules. Needless to say that this will involve numerous research grants given for collaboration between scientists in North America and Neotropical countries. I refer readers to this important document, especially pages 12–14 where four issues are addressed: “Why ornithologists collect specimens,” “What is an adequate sample?,” “Methods for collecting specimens,” and “Habitat and population considerations.”

No systematist worthy of this title will collect series of specimens of a taxon that is so extremely rare or localized that the very practice of collecting endangers its survival. Donegan speaks of “over-enthusiastic collec-

tors” in this regard. There were indeed some over-enthusiastic collectors in times long past. But over-enthusiastic collectors who are also respected scientists no longer exist. However, there are certainly many over-enthusiastic hunters. There are also some pseudo-scientists who collect too much, carry out commercial activities, and do so illegally, something scientists neither do nor condone. Museum systematists of the current generation are scientists who are rigorously trained by experienced museum workers who also happen to be among the most active of conservationists. An example of the modern and very productive symbiosis between collectors and conservationists can be seen at the Center for Biodiversity and Conservation of the American Museum of Natural History, whose mission is to inventory biodiversity in various parts of the world, to educate the general public about biodiversity patterns and the threats to biodiversity, as well as to help implement action for its conservation. This work is carried out by museum curators who collect specimens if and when needed and do so with the full endorsement and collaboration of local scientists, administrators, and conservationists. Once more I cite the collection-conservation example of Frank M. Chapman, a museum curator and collector who was also one of the pioneer conservationists of the early 20th century in the Western Hemisphere, and thanks to whom we now have the powerful Audubon conservation movement. I would like to mention an anecdote about this. Among other things, Frank Chapman the collector *cum* conservationist was instrumental in the foundation of the Connecticut Audubon Society. On the centennial of this event in 1998 the board of directors of the Society invited me, a successor to Chapman at the AMNH and also a collector *cum* conservationist, to be their keynote speaker, as they wanted to mark the continuing and important relationship between sci-

ence at a major museum (where collecting is not a hidden fact of life) and the most active forms of conservation.

A wonderful piece of conservation work in Colombia for which no specimens were collected is cited by Donegan as evidence that my “slogan” “No collection, no conservation” is fallacious. Donegan confuses two issues here. The first is relevant to the slogan but the second is not. The relevant point to be made (and which is worth repeating as it often seems not to be fully appreciated) is that without the collections carried out many years ago by museum workers in Colombia near, if not in, the area that was ultimately preserved (and of that I am extremely pleased), Donegan and his colleagues would not have been able to identify their bird species, hence would not have been able to make an inventory of them. Among these early and crucial collections are those headed by Frank M. Chapman in the first decade of this century, followed by those carried out by Kjell von Sneidern in later decades, both of which led to the well-known seminal check-lists of Colombian birds by Chapman (1917) himself and by Meyer de Schauensee (1948–1951). Only much later, and to a very large extent on the basis of such collections, was it possibly for others like Hilty & Brown (1986) and their illustrator Guy Tudor to publish the field guide to Colombian birds that is now the bible of all ornithologists who work in that country. Hence, sequentially in time, had there been no collection no later authoritative inventory or field guides would have been produced, hence no conservation. Thus it is clear that excellent modern conservation work can be done on the basis of inventories that do not involve collecting today. Indeed, some of the best of these inventories do not include collecting, such as the Rapid Assessment Program (RAP) surveys of Conservation International. I point out here that some of the champions of these surveys, especially

the late Ted Parker III, were trained in museum collections and acquired their field skills by combining museum and field work. According to Remsen & Schulenberg (1997: 11) "On LSU [Louisiana State University] expeditions, Parker prepared roughly 2,750 bird specimens and collected many hundreds more that were prepared by others." Again, no collection, no conservation. The second issue in which collection is indeed irrelevant to conservation, but which Donegan does not mention, is that, because of an irony of modern technology, it is nowadays possible to pinpoint areas to be protected without any ground surveys or bird inventories whatsoever, simply on the basis of remote-sensing information on endangered or patchy habitats.

In a refutation of my view that the plates in many field guides could not have been painted without museum specimens, Donegan states that "Few criticisms are ever levelled at the quality of plates and the accuracy of their depiction of birds in the field." In fact, criticisms of plates that have been painted from museum specimens are commonly levelled (e.g., McCaskie 1997, reviewing plates of emberizine sparrows in Rising & Beadle 1996). Regarding the apparent redundant availability of specimens for such plates, I have heard artists who have painted them on the basis of specimens at AMNH, where our collections are second to none, complain again and again that there were still not enough specimens to be able to depict this or that plumage variation.

I regret to say that I cannot agree with Donegan's claims that my justification of the importance of museum specimens for such things as our understanding and interpretation of molt "appears tenuous if not spurious." Some of the most fundamental studies of molt ever undertaken, those of the great ornithologist Erwin Stresemann (Stresemann & Stresemann 1966) were based entirely on

museum specimens. And more recently some of the most detailed studies of molt carried out by authors who were trying to establish criteria for field identification of difficult groups like shorebirds (Scolopacidae; see e.g., Wilds & Newlon 1983), gulls (Laridae; e.g., Tove 1993), and terns (Laridae; e.g., Wilds 1993) were based on painstaking studies of large series of well-labelled museum specimens.

Some of the misunderstandings between Donegan's and my views concerning collecting are, I suspect, based on some unfamiliarity with the astonishing extent of resources offered by large and well-maintained collections of birds, such as those at AMNH. To help bridge this gap, I therefore extend an invitation to Donegan (and to other ornithologists who, like him, are ambivalent about the value of specimens in museum collections and about the importance of further collecting) to drop by at the AMNH on their next trip to New York City. I will be delighted to show them the ornithological collections there. Although the amount of information that these specimens encode is vast, the amount of new or different information that can be unveiled by still more specimens, judiciously collected and in full compliance with existing laws, is even larger.

## REFERENCES

- Chapman, F. M. 1917. the distribution of bird life in Colombia. A contribution to a biological survey of South America. Bull. Am. Mus. Nat. Hist., Vol. 36, New York.
- Christidis, L. 1995. When is a dead bird a good bird? *Wingspan* 5 (1): 9–10.
- Donegan, T. M. 2000. Is specimen-taking of birds in the Neotropics really "essential"? Ethical and practical objections to further collection. *Ornitol. Neotrop.* 11: - .
- Gaunt, A. S., & L. W. Oring (eds.). 1997. Guidelines to the use of wild birds in research. Spec. Publ., The Ornithological Council, Washing-

- ton, D.C.
- Hilty, S. L., & W. L. Brown. 1986. A guide to the birds of Colombia. Princeton Univ. Press, Princeton, New Jersey.
- Hugues, A. L. 1992. Avian species described on the basis of DNA only. *Trends Ecol. Evol.* 7: 2–3.
- International Trust for Zoological Nomenclature. 1999. International code of zoological nomenclature, 4<sup>th</sup> ed. Natural History Museum, London, UK.
- LeCroy, M. L., & F. Vuilleumier. 1992. Guidelines for the description of new species in ornithology. *Bull. Br. Ornithol. Club* 112A(Suppl): 191–198.
- McCaskie, G. 1997. Review of: A guide to the identification and natural history of the sparrows of the United States and Canada. *Birding* 29: 247–248.
- Meyer de Schauensee, R. 1948–1951. The birds of the Republic of Columbia. *Caldasia* 5: 251–1112.
- Peterson, A. T., & S. M. Lanyon. 1992. New bird species, DNA studies and type specimens. *Trends Ecol. Evol.* 7: 167–168.
- Remsen, J. V., Jr. 1995. The importance of continued collecting of bird specimens to ornithology and bird conservation. *Bird Conserv. Int.* 5: 145–180.
- Remsen, J. V., Jr., & T. S. Schulenberg. 1997. The pervasive influence of Ted Parker on Neotropical field ornithology. *Ornithol. Monogr.* 48: 7–19.
- Rising, J. D., & D. D. Beadle. 1996. A guide to the identification and natural history of the sparrows of the United States and Canada. Academic Press, San Diego, California.
- Stresemann, E., & V. Stresemann. 1966. Die Mauser der Vögel. *J. Ornithol.* 107(Suppl): i–viii + 1–448.
- Torres-Mura, J. C. 1999. Editorial: colecciones de aves y el avance de la ornitología chilena. *Bol. Chil. Ornitol.* 6: 1.
- Tove, M. H. 1993. Field separation of Ring-billed, Mew, Common, and Kamchatka Gulls. *Birding* 25: 386–401.
- Vuilleumier, F. 1998. The need to collect birds in the Neotropics. *Ornitol. Neotrop.* 9: 201–203.
- Wilds, C. 1993. The identification and aging of Forster's and Common Terns. *Birding* 25: 94–108.
- Wilds, C., & M. Newlon. 1983. The identification of dowitchers. *Birding* 15: 151–166.
- Winker, K., B. A. Fall, J. T. Klicka, D. F. Parmelee, & H. B. Tordoff. 1991. The importance of avian collections and the need for continued collecting. *Loon* 63: 238–246.

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