Ornithological Applications, 2023, 125, 1–31
https://doi.org/10.1093/ornithapp/duac046
Advance access publication 7 February 2023
Review

AOS AMERICAN ORNITHOLOGICAL SOCIETY
Ornithological Applications
OXFORD

Neotropical ornithology: Reckoning with historical assumptions, removing systemic barriers, and reimagining the future

Letícia Soares[1,†] Kristina L. Cockle[2,†,*] Ernesto Ruelas Inzunza[3,†,*] José Tomás Ibarra[4,†] Carolina Isabel Miño[2,†] Santiago Zuluaga[5,†] Elisa Bonaccorso[6,†] Juan Camilo Ríos-Orjuela[7,†] Flavia A. Montaño-Centellas[8,†] Juan F. Freile[9] María A. Echeverry-Galvis[10] Eugenia Bianca Bonaparte[2] Luisa Maria Diele-Viegas[11] Karina Speziale[12] Sergio A.Cabrera-Cruz[13] Orlando Acevedo-Charry[14] Enriqueta Velarde[15] Cecilia Cuatianquiz Lima[16] Valeria S. Ojeda[12] Carla S. Fontana[17] Alejandra Echeverri[18] Sergio A. Lambertucci[12] Regina H. Macedo[19] Alberto Esquivel[20] Steven C. Latta[21] Irene Ruvalcaba-Ortega[22] Maria Alice S. Alves[23] Diego Santiago-Alarcon[24] Alejandro Bodrati[25] Fernando González-García[13] Nestor Fariña[26] Juan Esteban Martínez-Gómez[13] Rubén Ortega-Álvarez[27] María Gabriela Núñez Montellano[28] Camila C. Ribas[29] Carlos Bosque[30] Adrián S. Di Giacomo[31] Juan I. Areta[32] Carine Emer[33] Lourdes Mugica Valdés[34] Clementina González[35] María Emilia Rebollo[36] Giselle Mangini[28] Carlos Lara[37] José Cristóbal Pizarro[38] Victor R. Cueto[39] Pablo Rafael Bolaños-Sittler[40] Juan Francisco Ornelas[13] Martín Acosta[34] Marcos Cenizo[41] Miguel Ângelo Marini[19] Leopoldo D. Vázquez-Reyes[42] José Antonio González-Oreja[43] Leandro Bugoni[44] Martin Quiroga[45] Valentina Ferretti[46] Lilian T. Manica[47] Juan M. Grande[36] Flor Rodríguez-Gómez[48] Soledad Diaz[49] Nicole Büttner[50] Lucia Mentesana[51] Marconi Campos-Cerqueira[52] Fernando Gabriel López[36,53] André C. Guaraldo[47] Ian MacGregor-Fors[54] Francisca Helena Aguiar-Silva[29] Cristina Y. Miyaki[55] Silvina Ippi[12] Emilse Mérida[56] Cecilia Kopuchian[31] Cintia Cornelius[57] Paula L. Enríquez[58] Natalia Ocampo-Peñuela[91] Katherine Renton[60] Jhan C. Salazar[61] Luis Sandoval[62] Jorge Correa Sandoval[58] Pedro X. Astudillo[63] Ancilleno O. Davis[64] Nicolás Cantero[59] David Ocampo[65] Oscar Humberto Marin Gomez[42] Sérgio Henrique Borges[57] Sergio Cordoba-Cordoba[66] Alejandro G. Pietrek[32] Carlos B. de Araújo[2] Guillermo Fernández[67] Horacio de la Cueva[68] João Marcos Guimarães Capurucho[69] Nicole A. Gutiérrez-Ramos[70] Ariane Ferreira[17] Lílian Mariana Costa[71] Cecilia Soldatini[68] Hannah M. Madden[72] Miguel Angel Santillán[73] Gustavo Jiménez-Uzcátegui[74] Emilio A. Jordan[75] Guilherme Henrique Silva Freitas[76] Paulo C. Pulgarin-R[77] Roberto Carlos Almazán-Núñez[78] Tomás Altamirano[79] Milka R. Gomez[25] Myriam C. Velazquez[80] Rebeca Irala[59] Facundo A. Gandoy[28] Andrea C. Trigueros[81] Carlos A. Ferreyra[82] Yuri Vladimir Albores-Barajas[83] Markus Tellkamp[84] Carine Dantas Oliveira[57] Andrea Weiler[85] Ma. del Coro Arizmendi[42] Adrianne G. Tossas[86] Rebecca Zarza[59] Gabriel Serra[87] Rafael Villegas-Patraca[13] Facundo Gabriel Di Sallo[2] Cleiton Valentim[29] Jorge Ignacio Noriega[75] Giraldo Alayon García[88] Martín R. de la Peña[89] Rosendo M. Fraga[56] and Pedro Vitor Ribeiro Martins[90]

Submission Date: April 14, 2022. Editorial Acceptance Date: November 18, 2022

[1]Western University, Department of Biology and Advanced Facility for Avian Research, Canada
[2]CONICET-Universidad Nacional de Misiones, IBS, Argentina
[3]Universidad Veracruzana, Instituto de Biotecnología y Ecología Aplicada, Mexico
[4]Pontificia Universidad Católica de Chile, Chile
[5]Fundación Proyecto Águila Crestada Colombia (PAC-Colombia), Colombia
[6]Universidad San Francisco de Quito, Instituto Biosfera, Ecuador
[7]Universidad de los Andes, Departamento de Ciencias Biológicas, Colombia
[8]Universidad Mayor de San Andrés, Instituto de Ecología, Bolivia
[9]Red Aves Ecuador, Comité Ecuatoriano de Registros Ornitológicos, Ecuador
[10]Pontificia Universidad Javeriana, Colombia
[11]Universidade Federal de Alagoas, Brazil
[12]CONICET-Universidad Nacional del Comahue, INIBIOMA, Argentina
[13]Instituto de Ecología, A.C., Mexico
[14]University of Florida, School of Natural Resources and Environment, Department of Wildlife Ecology and Conservation and Florida Museum of Natural History, USA
[15]Universidad Veracruzana, Instituto de Ciencias Marinas y Pesquerías, Mexico
[16]Universidad Autónoma de Tlaxcala, Centro Tlaxcala de Biología de la Conducta, Mexico
[17]Pontifícia Universidade Católica do Rio Grande do Sul, Brazil
[18]Stanford University, Department of Biology, USA
[19]Universidade de Brasília, Brazil
[20]WWF Paraguay, Paraguay
[21]National Aviary, USA
[22]Universidad Autónoma de Nuevo León, Mexico
[23]Universidade do Estado do Rio de Janeiro, Brazil
[24]University of South Florida, USA
[25]Proyecto Selva de Pino Paraná, Argentina
[26]Reserva Natural Provincial Rincón de Santa María, Argentina
[27]Universidad Nacional Autónoma de México, Instituto de Investigaciones en Ecosistemas y Sustentabilidad, Mexico
[28]UNT-CONICET, Instituto de Ecología Regional, Argentina
[29]Instituto Nacional de Pesquisas da Amazônia, Brazil
[30]Universidad Simón Bolívar, Venezuela
[31]CONICET, CECOAL, Argentina
[32]CONICET, IBIGEO, Argentina
[33]Instituto de Pesquisa do Jardim Botânico do Rio de Janeiro, Brazil
[34]Universidad de La Habana, Facultad de Biología, Cuba
[35]Universidad Michoacana de San Nicolás de Hidalgo, Instituto de Investigaciones sobre los Recursos Naturales, Mexico
[36]Colaboratorio de Biodiversidad, Ecología y Conservación (ColBEC), Argentina
[37]UAT, Centro de Investigación en Ciencias Biológicas, Mexico
[38]Universidad de Concepción, Facultad de Ciencias Forestales, Chile
[39]CONICET-Universidad Nacional de la Patagonia "San Juan Bosco", CIEMEP, Argentina
[40]Sorbonne Université, Muséum National d'Histoire Naturelle, France
[41]Fundación de Historia Natural Félix de Azara-Universidad Maimónides, Argentina
[42]Universidad Nacional Autónoma de México, Facultad de Estudios Superiores Iztacala, Mexico
[43]Benemérita Universidad Autónoma de Puebla, Facultad de Ciencias Biológicas, Mexico
[44]Universidade Federal do Rio Grande, Brazil
[45]UNL-CONICET, ICiVetLitoral, Argentina
[46]CONICET, IEGEBA, Argentina
[47]Universidade Federal do Paraná, Brazil
[48]Universidad de Guadalajara, Departamento de Bioingeniería Traslacional, Centro Universitario de Ciencias Exactas e Ingenierías, Mexico
[49]Institute for Applied Ecology, USA
[50]Un Poco del Chocó Reserve and Biological Station, Ecuador
[51]Max Planck Institute for Ornithology, Germany
[52]Rainforest Connection, Puerto Rico
[53]CONICET-Universidad Nacional de La Pampa, INCITAP, Argentina
[54]University of Helsinki, Faculty of Biological and Environmental Sciences, Ecosystems and Environment Research Programme, Finland
[55]Universidade de São Paulo, Instituto de Biociências, Departamento de Genética e Biologia Evolutiva, Brazil
[56]Buenos Aires, Argentina
[57]Universidade Federal do Amazonas, Brazil
[58]El Colegio de la Frontera Sur, Mexico
[59]Wildlife Paraguay, Paraguay
[60]Universidad Nacional Autónoma de México, Instituto de Biología, Estación de Biología Chamela, Mexico
[61]Washington University in St. Louis, United States of America
[62]Universidad de Costa Rica, Escuela de Biología, Costa Rica
[63]Universidad del Azuay, Escuela de Biología, Ecuador
[64]Science and Perspective, Bahamas
[65]Princeton University, Department of Ecology and Evolutionary Biology, USA
[66]Universidad de Ciencias Aplicadas y Ambientales, Colombia
[67]Universidad Nacional Autónoma de México, Instituto de Ciencias del Mar y Limnología, Unidad Académica Mazatlán, Mexico
[68]Centro de Investigación Científica y de Educación Superior de Ensenada, Mexico

[69]Field Museum of Natural History, Negaunee Integrative Research Center, USA
[70]University of Puerto Rico, Puerto Rico
[71]Espinhacensis Pesquisas Ambientais, Brazil
[72]Caribbean Netherlands Science Institute, St. Eustatius, Caribbean Netherlands
[73]Gobierno de La Pampa, Museo Provincial de Historia Natural, Argentina
[74]Charles Darwin Foundation, Charles Darwin Research Station, Ecuador
[75]CONICET, CICYTTP, Argentina
[76]Universidade Federal de Goiás, Instituto de Ciências Biológicas, Departamento de Ecologia, Brazil
[77]Partnerships for Forests, Colombia
[78]Universidad Autónoma de Guerrero, Facultad de Ciencias Químico Biológicas, Mexico
[79]Universidad de Magallanes, Chile
[80]Fundación Moisés Bertoni, Paraguay
[81]University of Missouri-St. Louis, USA
[82]Ministerio de Ecología y RNR de la Provincia de Misiones, Argentina
[83]Universidad Autónoma de Baja California Sur, Mexico
[84]Universidad Yachay Tech, Ecuador
[85]Universidad Nacional de Asunción, Facultad de Ciencias Exactas y Naturales, Departamento de Biologia, Paraguay
[86]Universidad de Puerto Rico, Aguadilla, Puerto Rico
[87]Instituto Nacional de Pesquisas da Amazônia, Brazil
[88]Fundación Ariguanabo, Cuba
[89]Santa Fe, Argentina
[90]Observatório de Aves da Mantiqueira, Brazil
[91]University of California, Santa Cruz, USA

[*]Corresponding authors: Kristina L. Cockle, kristinacockle@gmail.com; Ernesto Ruelas Inzunza, ruelas.uv@gmail.com
[†]These authors contributed equally.

ABSTRACT

A major barrier to advancing ornithology is the systemic exclusion of professionals from the Global South. A recent special feature, *Advances in Neotropical Ornithology*, and a shortfalls analysis therein, unintentionally followed a long-standing pattern of highlighting individuals, knowledge, and views from the Global North, while largely omitting the perspectives of people based within the Neotropics. Here, we review current strengths and opportunities in the practice of Neotropical ornithology. Further, we discuss problems with assessing the state of Neotropical ornithology through a northern lens, including discovery narratives, incomplete (and biased) understanding of history and advances, and the promotion of agendas that, while currently popular in the north, may not fit the needs and realities of Neotropical research. We argue that future advances in Neotropical ornithology will critically depend on identifying and addressing the systemic barriers that hold back ornithologists who live and work in the Neotropics: unreliable and limited funding, exclusion from international research leadership, restricted dissemination of knowledge (e.g., through language hegemony and citation bias), and logistical barriers. Moving forward, we must examine and acknowledge the colonial roots of our discipline, and explicitly promote anti-colonial agendas for research, training, and conservation. We invite our colleagues within and beyond the Neotropics to join us in creating new models of governance that establish research priorities with vigorous participation of ornithologists and communities within the Neotropical region. To include a diversity of perspectives, we must systemically address discrimination and bias rooted in the socioeconomic class system, anti-Blackness, anti-Brownness, anti-Indigeneity, misogyny, homophobia, tokenism, and ableism. Instead of seeking individual excellence and rewarding top-down leadership, institutions in the North and South can promote collective leadership. In adopting these approaches, we, ornithologists, will join a community of researchers across academia building new paradigms that can reconcile our relationships and transform science. Spanish and Portuguese translations are available in the Supplementary Material.

Keywords: discovery narrative, discrimination, knowledge construction, north–south relations, parachute science, regional priorities, research agenda

How to Cite

Soares, L., K. L. Cockle, E. Ruelas Inzunza, J. T. Ibarra, C. I. Miño, S. Zuluaga, E. Bonaccorso, J. C. Ríos-Orjuela, F. A. Montaño-Centellas, J. F. Freile, et al. (2023). Neotropical ornithology: Reckoning with historical assumptions, removing systemic barriers, and reimagining the future. Ornithological Applications 125:duac046.

LAY SUMMARY

- Research conducted by ornithologists living and working in Latin America and the Caribbean has been historically and systemically excluded from global scientific paradigms, ultimately holding back ornithology as a discipline.
- To avoid replicating systems of exclusion in ornithology, authors, editors, reviewers, journals, scientific societies, and research institutions need to interrupt long-held assumptions, improve research practices, and change policies around funding and publication.
- To advance Neotropical ornithology and conserve birds across the Americas, institutions should invest directly in basic field biology research, reward collective leadership, and strengthen funding and professional development opportunities for people affected by current research policies.

Ornitología Neotropical: Reconsiderando supuestos históricos, eliminando barreras sistémicas y reimaginando el futuro

Resumen

Una barrera importante para el avance de la ornitología es la exclusión sistémica de los profesionales del Sur Global. Una colección especial de artículos publicada recientemente, *Advances in Neotropical Ornithology*, incluye un análisis de deficiencias que involuntariamente sigue un largo patrón de destacar a las personas, el conocimiento y las opiniones de los EEUU y Europa (Norte Global) mientras que omite en

gran medida las perspectivas de personas basadas en el Neotrópico. Aquí revisamos las fortalezas y oportunidades actuales en la práctica de la ornitología neotropical. Además, discutimos el problema de evaluar el estado de la ornitología neotropical a través de una visión del norte, incluida la propagación de narrativas de descubrimiento, una imagen incompleta (y sesgada) de su historia y avances, y la promoción de preguntas, herramientas y enfoques que, si bien son populares actualmente en el norte, no necesariamente encajan en la agenda y realidades de la investigación neotropical. Argumentamos que los avances futuros en la ornitología neotropical dependerán críticamente de identificar y abordar las deficiencias sistémicas que frenan a los ornitólogos que viven y trabajan en el Neotrópico: financiamiento limitado y poco confiable, exclusión del liderazgo de la investigación internacional, difusión restringida del conocimiento (por ejemplo, a través de la hegemonía del idioma y el sesgo de citación) y barreras logísticas. En el futuro, debemos examinar y reconocer las raíces coloniales de nuestra disciplina y promover agendas de investigación, capacitación y conservación que sean explícitamente anticoloniales. Invitamos a nuestros colegas dentro y fuera del Neotrópico a unirnos en la creación de nuevos modelos de gobernanza que establezcan prioridades de investigación con una participación vigorosa de ornitólogos y otras partes interesadas de la región neotropical. Para incluir una diversidad de perspectivas, debemos abordar sistémicamente la discriminación y el sesgo arraigados en el sistema de clases socioeconómicas, el racismo anti-negro, anti-mestizo y anti-indígena, la misoginia, la homofobia, la inclusión simbólica y el capacitismo. En lugar de buscar la excelencia individual y recompensar el liderazgo de arriba hacia abajo, las instituciones del norte y del sur pueden promover el liderazgo colectivo. Al adoptar estos enfoques, los ornitólogos nos uniremos a una comunidad de investigadores de toda la academia en la construcción de nuevos paradigmas que reconcilien nuestras relaciones y transformen la ciencia. Hay traducciones al español y al portugués en el material suplementario.

Palabras clave: agenda de investigación, ciencia neocolonial, ciencia paracaídas, construcción del conocimiento, discriminación, narrativa de descubrimiento, prioridades regionales, relaciones norte-sur

INTRODUCTION

Roughly a third of all bird species occur in the Neotropics (Mexico, Central and South America, and the Caribbean; Newton 2003), yet these birds are under-represented by an order of magnitude in scientific studies (Ducatez and Lefebvre 2014), leading many to call for increased research in Neotropical ornithology (Ramos 1988, Naranjo et al. 1992, Estades 2002, Freile et al. 2006, 2014, Alves et al. 2008, Freile and Córdoba 2008, Latta 2012). These calls were recently reiterated in a Special Feature entitled *Advances in Neotropical Ornithology*, published in *The Auk: Ornithological Advances* and *The Condor: Ornithological Applications* (Lindell and Huyvaert 2020), which included a roadmap for identifying and filling shortfalls in Neotropical ornithology (Lees et al. 2020). The framework for this roadmap was the idea that biological knowledge shortfalls, grouped in seven domains (systematics, biogeography, population biology, evolution, functional ecology, abiotic tolerance, and biotic interactions) limit large-scale comprehension of biodiversity (Hortal et al. 2015). However, knowledge—and knowledge gaps—look different depending on where we are standing, our lived experiences, our assumptions, and what we perceive to be our objectives (Naranjo et al. 1992). In this paper, we use "Global North" to indicate wealthier, geopolitically dominant regions (i.e. Canada, USA, Europe, Australia, New Zealand, and Japan), and "Global South" for the rest of the world (Africa, Latin America and the Caribbean, most of Asia). Of course, the world is much more nuanced than this binary, but we chose "Global North" and "Global South" for simplicity of communication, and to avoid the negative implications of alternate terms (Khan et al. 2022).

The roadmap by Lees et al. (2020) aimed to "take stock of the last 25 years of Neotropical ornithological work since the untimely death of Ted Parker" (Lees et al. 2020,1). It was initially invited as the first chapter of a (second) special volume honoring Theodore A. Parker III, which, like the special volume of *Ornithological Monographs* edited by Remsen (1997), would pay homage to Parker's legacy (A. C. Lees *in litt*. 2020). Parker was a field ornithologist from the USA, who specialized in the Neotropics and died tragically in a plane crash while conducting fieldwork in 1993 (Remsen 1997). His contributions, and those of his colleagues, sparked important lines of research in the Neotropics, and some of our own work builds on their publications (e.g., González-García 1994, 1995, Bonaccorso 2009, Mata et al. 2009, Areta and Cockle 2012, Ruelas Inzunza et al. 2012, Borges et al. 2019, Martínez-Medina et al. 2021).

While admiring Parker's work and understanding the context of the invited contribution by Lees et al. (2020), we think it is problematic to build a roadmap for Neotropical ornithology based primarily on a foreign perspective. The review by Lees et al. (2020) cites literature from only three of the many ornithological journals based in the Neotropics (Table 1). It focuses quite extensively on contributions of foreign scientists (including quotes and photos), which creates the unfortunate impression that Neotropical ornithology advances primarily in response to a northern research agenda, led by short-term visitors who conduct fieldwork in the region, but produce, analyze, and disseminate knowledge elsewhere (e.g., see Monge-Nájera 2002, Adame 2021, Haelewaters et al. 2021, Asase et al. 2022). Our critique is not aimed at the authors of the Lees et al. (2020) roadmap, their collaborations, or their research programs. Nor do we aim to provide an alternative roadmap. Before we can define where we each want to be in terms of knowledge about birds, and build roadmaps to get there, we need policy and cultural changes that interrupt the *status quo* of research agendas for the Neotropics, decided by researchers in the USA and Europe. The Lees et al. (2020) paper ignited our critique, but all of our authors and readers have likely contributed, inadvertently, to perpetuating systems of exclusion through our research practices.

The Neotropical region stretches from central Mexico to the southern tip of South America (Sclater 1858, Newton 2003). Although frequently imagined, from outside, as a rather homogenous monolith (Strahl 1992), the Neotropical region is a complex mosaic, culturally, linguistically, socially, racially, and economically. It encompasses biomes from tropical to sub-polar, with more than 40 countries and political units, and a human population comparable to that of Europe with twice its area. Yet, of the 10 papers published in the Special Feature *Advances in Neotropical Ornithology*, only three included authors affiliated with a Neotropical institution, and only one of them was listed as first author. In fact, 77% of the contributors to the special feature, and all six contributors to the Lees et al. (2020) roadmap, were primarily affiliated with institutions in the USA, Europe, or Canada; Supplementary Material Table S1). Foreign-based scientists unquestionably contribute to the development of Neotropical ornithology, but exclusion of the Latin American and Caribbean scientific

TABLE 1. Peer-reviewed ornithological journals focusing on the Neotropics (in chronological order by date of creation). *Journals cited by Lees et al. (2020). In addition to these journals, dozens of other regional zoology, ecology, biodiversity, veterinary, paleontology, ethnobiology, and natural history journals regularly publish papers in ornithology. Access: Open Access = all articles freely available to readers, Paywalled = access restricted (e.g., to members, libraries, paying customers), Hybrid indicates a mix of Open Access and Paywalled articles. Cost to authors indicates whether authors must pay article processing charges (APC) or page charges to publish. [1]Formerly, Boletín Chileno de Ornitología. [2]Discontinued in 2020. [3]Formerly, El Pitirre. [4]Formerly, Revista Brasileira de Ornitologia and Ararajuba. This table does not include non peer-reviewed journals that are specialized in birds, such as Acharà: Revista de Estudio y Observación de Aves (published by Aves Uruguay), Boletim da Sociedade Brasileira de Ornitologia (Sociedade Brasileira de Ornitologia), El Bien-te-veo (Sociedad Ornitológica Puertorriqueña), or Spizaetus Boletín (Red de Rapaces Neotropicales).

Journal	Published by	Year 1st issue	Languages	Access	Cost to authors (USD)	Website
El Hornero	Aves Argentinas/ Asociación Ornitológica del Plata	1917	Spanish, English	Open Access	Free	https://www.avesargentinas.org.ar/ciencia/el-hornero
Nuestras Aves	Aves Argentinas/ Asociación Ornitológica del Plata	1962	Spanish, Portuguese	Open Access	Free	https://www.avesargentinas.org.ar/ciencia/nuestras-aves
Revista Chilena de Ornitología[1]	Unión de Ornitólogos de Chile (UNORCH)	1969	Spanish, English	Open Access	Free	https://aveschile.cl/revista-rco/
Atualidades Ornitológicas[2]	Pedro Salviano Filho (deceased)	1984	Portuguese, Spanish, English, French, Italian	Hybrid	Free	N/A
Journal of Caribbean Ornithology[3]	BirdsCaribbean	1988	English, Spanish, French	Open Access	Free	https://jco.birdscaribbean.org/index.php/jco
Boletín de la Sociedad Antioqueña de Ornitología	Sociedad Antioqueña de Ornitología	1990	Spanish, English	Open Access	Free	https://sao.org.co/boletinsao.html
Ornitología Neotropical*	Neotropical Ornithological Society	1990	English, Spanish, French, and Portuguese	Open Access	Beyond 10 pages, $50 per page	https://journals.sfu.ca/ornneo/index.php/ornneo
Ornithology Research[4]*	Sociedade Brasileira de Ornitologia	1990	English (Portuguese and Spanish until 2016)	Hybrid	Free ($2780 for open access)	http://revbrasilornitol.com.br/BJO https://www.springer.com/journal/43388/
Cotinga	Neotropical Bird Club (NBC)	1994	English, Spanish, Portuguese	Hybrid	Free	https://www.neotropicalbirdclub.org/nbc-publications/cotinga/
Zeledonia	Asociación Ornitológica de Costa Rica (AOCR)	1997	Spanish, English	Members only	Free	https://www.zeledonia.com/
Huitzil, Revista Mexicana de Ornitología	Sociedad para el Estudio y Conservación de las Aves en México A.C. (CIPAMEX)	2001	Spanish, English	Open Access	Free	http://www.mexorn.org/index.php/huitzil
Ornitología Colombiana	Asociación Colombiana de Ornitología	2003	Spanish, English	Open Access	~$2.00 per page	https://asociacioncolombianadeornitologia.org/revista-ornitologia-colombiana/
Ornithologia[2]*	Centro Nacional de Pesquisas e Conservação de Aves Silvestres (CEMAVE), Brazil	2005	Portuguese, Spanish, English	Open Access	Free	http://ornithologia.cemave.gov.br/index.php/ornithologia/about/index
La Chiricoca	Red de Observadores de Aves y Vida Silvestre de Chile (ROC)	2006	Spanish	Open Access	Free	http://www.lachiricoca.cl/la-revista/
Boletín de la Unión de Ornitólogos del Perú	Unión de Ornitólogos del Perú	2006	Spanish, English	Open Access	Free	https://sites.google.com/site/boletinunop/
Revista Venezolana de Ornitología	Unión Venezolana de Ornitólogos	2011	Spanish, English	Open Access	Free	http://uvo.ciens.ucv.ve/?page_id=2342

Table 1. Continued.

Journal	Published by	Year 1st issue	Languages	Access	Cost to authors (USD)	Website
Revista Ecuatoriana de Ornitología	Red Aves Ecuador	2017	Spanish, English	Open Access	Free	https://revistas.usfq.edu.ec/index.php/reo
Boletín de la Asociación Boliviana de Ornitología	Asociación Boliviana de Ornitología	2021	Spanish, English	Open Access	Free	https://www.facebook.com/Bolet%C3%ADn-ASBOR-255987806272275/?_rdr

community is a long-standing pattern with deep roots in the scientific colonialism of the 19th and 20th centuries (Raby 2017a, Mohammed et al. 2022). Today, it is still common for high-impact reviews, proposals, and research articles focused on the Neotropics to neglect contributions, perspectives, and goals from within the region, often overlooking important developments and key barriers to advancing knowledge. This pattern is visible not just in Neotropical ornithology but across academic disciplines and across the Global South (Cusicanqui 2012, McKechnie and Amar 2018, Adame 2021, de Gracia 2021, Trisos et al. 2021, Asase et al. 2022).

People in the Neotropics share a responsibility for how ornithology is conceived and practiced, and we posit that effective strategies to further develop Neotropical ornithology require a critical review of research practices and perspectives that have long been taken for granted. Here, we explore current strengths and challenges of Neotropical ornithology in a global context, contrast our assessment with prevailing views expressed or implied in the roadmap by Lees et al. (2020), explore some of the consequences for ornithology, and propose systemic changes to reduce inequities and advance Neotropical ornithology. We do not represent all Neotropical ornithologists, and we recognize that our authorship remains biased (e.g., 58% cis men, 39% white or ethnically European, 96% able-bodied, 64% based in Argentina, Mexico, or Brazil). However, we made intentional efforts and took extra time to ensure that we included and highlighted voices from a breadth of regions, races, ethnicities, gender identities, disciplines, career paths, and stages (Supplementary Material Table S2). In our citations, we prioritized literature by Neotropical-based authors, where appropriate. We recognize that some of the terms that are commonly used in the literature on colonialism in science will be uncomfortable to some readers. However, we believe this discomfort is a necessary stage in confronting the history of our discipline (and our own participation in that history), so that we can grow and change as researchers and institutions. Some excellent examples of scientists confronting difficult histories can be found in the recent special feature on Nature, Data, and Power, at *American Naturalist* (Kamath 2022).

NEOTROPICAL ORNITHOLOGY TODAY

Strengths

Ornithology in Latin America and the Caribbean is underpinned by regional institutions, conservation programs, and a rapidly growing cadre of students, professionals, and non-academics based in this region, who creatively propel the discipline despite numerous challenges. Today, ornithological research in the Neotropics is made possible by a combination of locally driven and government-funded research, scientific societies, universities, scientific collections, non-governmental organizations, citizen-science (=community science) projects, international collaborations, and highly significant contributions from independent naturalists, birding clubs, tour guides, environmental licensing studies, Indigenous communities, and park rangers. Ornithological societies within and beyond the Neotropics provide funding to attend professional meetings. Beyond the USA-backed programs and research stations most visible to researchers in the Global North, many well-established Latin American and Caribbean groups are powerhouses of research focused on Neotropical birds, with long-term programs in the Caribbean, Mesoamerica, the Andes, the sub-Antarctic

TABLE 2. A few examples of ongoing, Neotropical-based, long-term (20+ years) ornithology research programs (ordered by starting year), and the biological shortfalls they address. Domains follow Lees et al. (2020): Systematics, Biogeography, Population Biology, Evolution, Functional Ecology, Abiotic Tolerance, Biotic Interactions, Natural History; we add Human-wildlife Interactions as a ninth domain of critical importance to ornithology. We chose to highlight studies initiated or currently led by in-country researchers that may be less visible to researchers outside of the Neotropics.

Year started	Country or region	Biome/site	Focus	Domain	Example citation
1960s	Ecuador	Galapagos	Marine birds, endemics	Natural History, Population Biology, Human-wildlife Interactions, Abiotic Tolerance, Biotic Interactions	Jiménez-Uzcátegui et al. (2011, 2019) and Dvorak et al. (2017)
1970	Argentina	Espinal	Nests	Natural History	de la Peña (2005, 2019)
1970	Argentina	Marine	Marine birds	Population Biology, Abiotic Tolerance, Biogeography, Human-wildlife Interactions	Yorio et al. (2005) and Copello and Quintana (2009)
1970	Mexico	Sea of Cortez	Seabirds	Population Biology	Anderson et al. (2017)
1980	Brazil	Amazon	Taxonomy, evolution	Systematics	Buainain et al. (2021), Ritter et al. (2021) and Stopiglia et al. (2022)
1980	Mexico	Marine	Blue-footed Boobies	Evolution	Drummond et al. (1986), Pérez-Staples and Drummond (2005) and Ancona et al. (2011, 2018)
1980	Mexico	Islands of the Sea of Cortez	Seabirds, Heermann's Gulls	Population Biology, Biogeography, Functional Ecology, Biotic Interactions	Velarde (1992), Velarde et al. (2015, 2019), Ruiz et al. (2017) and Veit et al. (2021)
1984	Argentina	Monte desert	Ecology	Population Biology, Functional Ecology, Biotic Interactions, Natural History	Marone (1992), Lopez de Casenave (2001), Cueto et al. (2008) and Sagario et al. (2020)
1980s	Cuba	La Habana	Urban birds	Population Biology	García-Lau et al. (2018)
1989	Colombia	Bogotá	Monitoring	Abiotic Tolerance	Stiles et al. (2017, 2021)
1990	Venezuela	Cordillera de la Costa Montane forest	Migrant and resident birds	Population Biology, Natural History	Lentino et al. (2003), Lentino (2016) and Malpica-Piñeros et al. (2020)
1990	Venezuela	Caribbean	Parrot conservation	Population Biology, Human-wildlife Interactions	Sanz and Rodríguez-Ferraro (2006) and Sánchez-Mercado et al. (2022)
1990	Brazil	Marine	Marine bird conservation	Human-wildlife Interactions	Vaske Júnior (1991) and Nascimento et al. (2022)
1991	Mexico	Gulf of Mexico Coastal Plain	Raptor monitoring and conservation	Population Biology	Ruelas Inzunza et al. (2000, 2009, 2010)
1991	Brazil	Atlantic Forest	Parrot conservation	Population Biology	Martinez and Prestes (2008, 2021)
1992	Brazil	Atlantic Forest	Fragmentation	Biogeography	Aleixo and Vielliard (1995), dos Anjos (1998), Uezu et al. (2005), Hasui et al. (2018), dos Anjos et al. (2019), Rodrigues et al. (2019) and Pizo and Tonetti (2020)
1993–1994	Mexico	Pacific Islands	Socorro Dove, Socorro Mockingbird	Population Biology	Martínez-Gómez and Curry (1996) and Martínez-Gómez et al. (2010)
1994	Paraguay	Atlantic Forest	Ethno-ornithology	Natural History, Human-wildlife Interactions	Chachugi (2013) and Madroño (2016)
1994	Ecuador	Tropical Andes	Species-habitat associations	Population Biology, Biotic Interactions	Latta et al. (2011), Astudillo et al. (2020)
1995	Mexico	Tropical Dry Forest	Parrot conservation	Population Biology, Natural History, Biotic Interactions	Renton (2001), Renton and Salinas Melgoza (2004) and Renton et al. (2018)
1995	Argentina	Chaco	Nests, behavior	Natural History	Di Giacomo (2005)

Table 2. Continued.

Year started	Country or region	Biome/site	Focus	Domain	Example citation
1997	Chile	Mediterranean forest	Conservation biology	Natural History, Population Biology	Estades and Temple (1999) and Santander et al. (2021)
1998	Argentina	Austral Temperate Forests	Magellanic Woodpecker	Population Biology	Ojeda (2004) and Chazarreta et al. (2012)
1999	Argentina	Patagonian Monte	Burrowing Parrot	Population Biology	Masello and Quillfeldt (2012)
2000	Chile	Sub-Antarctic forest	Interdisciplinary ecology	Population Biology, Biotic Interactions, Human-wildlife Interactions	Rozzi and Jiménez (2014)
2002	Chile	South-Temperate Rain Forest	Reproduction	Natural History	Moreno et al. (2007), Ippi et al. (2017) and Botero-Delgadillo et al. (2020)

region, the Amazon basin, and the Atlantic Forest, to name a few (Table 2). Regional strengths extend to the fields of avian paleontology, ethno-ornithology, and behavior, mostly overlooked by Lees et al. (2020), but crucial for filling gaps in knowledge about the systematics, evolution, biogeography, mutualistic interactions, abiotic tolerance, and natural history of Neotropical birds (e.g., Cohn-Haft et al. 1997, Ornelas et al. 2013, Tambussi and Degrange 2013, Navarro-Sigüenza et al. 2014, Vizentin-Bugoni et al. 2014, Ibarra and Pizarro 2016, Reboreda et al. 2019).

Across Latin America and the Caribbean, hundreds of graduate programs offer master's and doctoral degrees with theses in ornithology (Paynter 1991, Alves et al. 2008, Freile et al. 2014). In some countries, notably Argentina, Mexico, and Brazil, public universities offer free undergraduate or graduate training. Many undergraduate programs require theses, which can result in publications in regional or global-scope journals. In several countries, ornithological research is government-funded, with agencies providing salaries, fellowships, and grants for research and graduate studies (e.g., CONICET in Argentina, CONACYT in Mexico, ANID in Chile, MINCIENCIAS in Colombia, CNPq and CAPES in Brazil). In many cases, free and paid training opportunities in Latin America are extended to foreigners, such that a Colombian student can receive 5 years of full-time salary from CONICET to obtain a PhD in Argentina, or a Brazilian student can attend a free week-long statistics course in Uruguay. Organizations within and beyond the Neotropics have provided specialized training courses in ornithology, for example in banding, study design, and advanced data analysis.

The wealth of regionally produced knowledge in Neotropical ornithology has been increasingly accessible, largely resulting from the growth of our professional societies since the 1980s (e.g., Neotropical Ornithological Society, the Brazilian Society of Ornithology, Asociación Colombiana de Ornitología, Society of Avian Paleontology and Evolution, and Sociedad para el Estudio y Conservación de las Aves de México A.C. [CIPAMEX]). Many of these societies regularly organize professional meetings (e.g., Congreso de Ornitología Neotropical, Congreso para el Estudio y Conservación de las Aves en México, Congreso Colombiano de Ornitología, BirdsCaribbean meetings) and publish peer-reviewed scientific journals in Spanish, Portuguese, and English. Regional journals (Table 1) are the main outlets for publications on natural history and bird distributions in the Neotropics and have contributed greatly to advancing knowledge of avian ecology (Vuilleumier 2003, Levy 2008, Freile et al. 2014, Devenish-Nelson et al. 2017, Bugoni 2020). At least 21 regional journals focus on Neotropical ornithology; most of them are Diamond Open Access (free to readers and free to authors; Table 1). The oldest, *El Hornero*, dates to 1917 (Lopez de Casenave 2017).

Challenges: Systems of Exclusion

Despite the many strengths mentioned above, one of the most pervasive shortfalls in Neotropical ornithology is the systemic exclusion of Neotropical ornithologists, and their research, from the global scientific context (Duffy 1988, Strahl 1992, Valenzuela-Toro and Viglino 2021, Khelifa and Mahdjoub 2022, Table 3). Within and beyond the Neotropics, the current academic system rewards fast-paced science that reinforces existing inequalities and racial disparities, disfavoring under-represented groups (Leite and Diele-Viegas 2021). For a variety of reasons we discuss below, Neotropical researchers often ask different kinds of questions; use different study designs, sampling protocols, and tools; and disseminate our research at a different pace and in different outlets than colleagues who work at institutions in the Global North. For example, in the face of chronic and severe funding scarcity, we may prioritize our insufficient funds for training students and involving local communities (vs. purchasing imported technology). Current systems in academia (within and beyond the Neotropics) allow and even encourage ornithologists to overlook research contributions of colleagues based in the Neotropics (Table 3), and these systems of exclusion extend well beyond ornithology (Gibbs 1995,

Campos-Arceiz et al. 2018, Minasny et al. 2020, Nuñez et al. 2021).

Dominance of the northern lens.

Reviewers and editors rarely ask scholars from Europe, Canada, or the USA to translate, learn, or cite theory and case studies from Latin America or Africa, but they routinely expect scholars from the Global South to frame their work in the context of citations, theory, and case studies from the Global North (Cusicanqui 2012, Monjeau et al. 2013, Rau et al. 2017, Pérez and Radi 2019). Whereas studies from Europe or North America are interpreted as being globally representative (de Gracia 2021), similar studies from the Neotropics are often rejected as "too locally focused". In Canada or the USA, students studying Nearctic bird species stand on the shoulders of decades of research into their study systems, summarized, for example, in Pyle's (2008) guide to molt, extensive and well-researched species accounts in Birds of North America (https://birdsoftheworld.org/bow/home), and annual data from the Breeding Bird Survey (https://www.pwrc.usgs.gov/bbs/). They can, and usually must, focus their research questions to ensure that their thesis represents an advance in knowledge, often with several other labs working on the same species and similar questions, concurrently. In contrast, students in the Neotropics are often the first to publish on the basic biology of their study system or species, which can include globally threatened and undescribed or newly described species (e.g., Sanabria Mejía 2010, Repenning 2012). These students must learn all about their system from their own field observations (e.g., molt patterns, distribution, diet, phenology, reproductive behavior, vocalizations, and subspecies identification) as a first step in their research. In such a context, descriptive studies (as opposed to hypothesis testing) can be the most appropriate way to move knowledge forward and address regional priorities for bird conservation. Nevertheless, the contributions of these students to ornithology are overwhelmingly assessed using whatever standards and values are current in the Global North. They must publish (in foreign journals, in English, using foreign theoretical frameworks and case studies from the Global North) "or perish". In this way, the northern lens is a self-perpetuating system that excludes certain types of research and researchers.

Parachute science.

When researchers (including students) from the Global North conduct short-term projects in countries of the Global South, they may hope for meaningful long-term collaborations, but institutional policies and academic culture can be a major disincentive to investing the necessary time and energy, and can steer them away from the research questions most important for advancing science and conservation locally. Parachute science occurs when foreigners (usually from a wealthier region) lead projects without including local researchers in authorship, planning, and decision-making roles (de Vos 2022). It has resulted in many papers in high-impact journals, by authors from the Global North, but it can slow or obstruct the growth of research capacity in the Global South (Asase et al. 2022). Parachute science leaves researchers based in Latin America and the Caribbean under-represented in research networks, publications, professional societies, editorial boards, priority-setting groups of funders, taxonomic authorities, awards, and citations (Espin et al. 2017, Dada et al. 2022). This exclusion is especially acute for those Neotropical researchers who are historically, systemically, and persistently excluded from science because of marginalized identities (e.g., Black, Brown, and Indigenous women). Beyond its serious ethical implications, the self-perpetuating system of parachute science is a barrier to achieving conservation goals. For the many species of long-distance migratory birds in steep decline (Rosenberg et al. 2019), analysis of citizen-science and tracking data [solutions recommended by Lees et al. (2020)] by northern researchers will be insufficient to understand and reverse stressors on the non-breeding grounds (Faaborg et al. 2010, Buxton et al. 2021). Conservation efforts for migratory birds in the Americas can only succeed if a diversity of people based in the Neotropics are involved in leadership, planning, and implementation.

Language hegemony.

Modern science is, in the words of Gordin (2015:2), "the most resolutely monoglot international community". Few people in Latin America and the Caribbean are native speakers of English, and in most countries only a privileged minority can afford to learn English as a second language (e.g., about 5% of the population of Bolivia, Brazil, or Ecuador, vs. 38% of the European Union; European Commission 2006, British Council 2015, Sevy-Biloon et al. 2020). Many journals (including *Ornithology* and *Ornithological Applications*) explicitly ask authors whose primary language is not English to have their work edited by an English-speaking colleague or professional editing service (Instructions for Authors: *Ornithology* and *Ornithological Applications*, 21 December 2021). However, English-speaking colleagues are rarely available for free editing of manuscripts, and professional editing services cost ~US$600 for a 6,000-word manuscript—more than a month's salary for many scientists in Latin America and the Caribbean. Disseminating and integrating the knowledge generated by non-English speakers is a justice issue critical to both the inclusiveness and the quality of science (Ramírez-Castañeda 2020, Amano et al. 2021). Non-English journals are critical to disseminating ornithological research by, and to, groups under-represented in science. However, global reviews frequently overlook research that is not in English, which lowers impact factors and pushes Latin American students and researchers to publish in English when possible (Di Bitetti and Ferreras 2017, Konno et al. 2020). Even researchers based in the Neotropics may often prioritize citing work in English, led by scientists from wealthier regions, in an attempt to increase the chances their manuscripts will be accepted in global-scope journals (Meneghini et al. 2008, MacGregor-Fors et al. 2020). In many cases these citations are imposed by reviewers and editors during the review process.

Language hegemony also extends to bird names. Journals and international meetings often require the use of English common names, rather than the scientific (Latin) names that are supposed to be a global standard and are used by ornithologists throughout the Neotropics. To communicate their research, Neotropical researchers and students must re-learn avian taxonomy. Similarly, birdwatchers, birding guides, eBirders, and guidebooks in Latin America and the Caribbean routinely use English birdwatching terms and English common names for birds. This habit helps when guiding English-speaking groups, but it is also a powerful sign of cultural assimilation (Rozzi 2013, Cantú et al. 2020). Whereas English names were often generated in museums and refer to

TABLE 3. Major barriers that hold back the development of Neotropical ornithology.

Barrier	Examples
Funding	***Field work.*** Scarce and unpredictable funding from governments (including currency devaluation) favors applied science and limits technology, geographic location, sample size, replication, and length of studies and monitoring programs. Researchers must adapt their projects to available calls for funding and long delays in reimbursement, develop many projects funded by several small grants, and spend out-of-pocket to sustain data collection. Many grants have unnecessary budget restrictions (e.g., no salaries for assistants) or requirements (e.g., must include bird banding or uploading field data to online repositories) that condition the research or conservation program and who can participate. Trade embargos by nations of the Global North prevent organizations from funding research in some countries, such as Cuba and Haiti. Often, Neotropical ornithologists do not pursue their main interests, but adapt the resources they have to do what they can, making it difficult to maintain sampling protocols across time and space. ***Lack of institutional overhead.*** Institutions in the Neotropics do not cover many research costs that ornithologists from the Global North take for granted. Ornithologists in the Neotropics frequently pay out-of-pocket for bird bands, page charges, conference fees, travel, printing, field equipment, camping equipment, station fees, permits, research vehicles, food and accommodation for volunteers, office furniture, office cleaning supplies, vehicle repairs, and shipping of samples to colleagues (including shipping to colleagues in the Global North). The frequent need to self-finance (on a minimal salary) severely limits the scope, timing, and sample size of projects, as well as reinforcing socioeconomic inequalities among researchers within Neotropical countries (e.g., researchers who can afford a personal vehicle will have a larger sample size and more balanced study design). Even some of our regional journals are self-financed, which leaves them in a precarious situation; Atualidades Ornitológicas was funded by the editor, Pedro Salviano Filho, and was discontinued when he passed away in 2020. Regional journals supported by ornithological societies depend on free software and the unpaid labor of volunteers, which can sometimes slow or complicate the review process. ***Salaries and scholarships.*** Small and unpredictable salaries of researchers and students limit the spending of personal funds on travel, conferences, courses, society memberships, and computer hardware and software. Although some countries offer scholarships for graduate students and post-docs (e.g., Brazil, Chile, Argentina, Mexico), these stipends are insufficient to allow any savings. Supervisors rarely have funding to pay short-term stipends, such that students from working-class backgrounds may face poverty the month their fellowship ends. In practice, many ornithologists can only access a paid teaching position at a university after years of unpaid work as a teaching assistant or junior lecturer. ***Publication charges.*** Grant funding to Neotropical ornithologists is generally insufficient to pay for Open Access publications in major journals, which typically costs $1,000–3,000 USD (~1 to 4 months salary for a research scientist in Argentina). The Gold Open Access model, promoted by many governments and institutions as a best practice for sharing scientific knowledge, increases the impact of scientists from European and North American institutions (who can afford to pay), while effectively excluding knowledge produced by scientists in the Neotropics (who cannot). Valuable research remains as gray literature and unpublished theses.

Table 3. Continued.

Barrier	Examples
Representation of Neotropical ornithologists and institutions in research leadership	***International priorities and decisions.*** Ornithologists from the Global South are often perceived as a legion of "fixers" and field workers, who solve logistical problems and collect data, but are not needed in setting the research agenda or interpreting results (Asase et al. 2022). Even northern researchers who firmly believe in their intent to respectfully collaborate with scientists from the Global South may act in opposite ways, for example by excluding southern partners from publications (Dahdouh-Guebas et al. 2003). Neotropical ornithologists are under-represented among the leadership of international ornithological societies, taxonomic authority bodies, editorial boards, scientific committees for conferences, and reviewers of global-scope journals, and are generally excluded from important policy decisions around research (e.g., data-sharing, open access; Serwadda et al. 2018). Many researchers from the Global North begin working on Neotropical birds with very little understanding of the social, political, cultural, and ecological contexts of these birds. However, because of the tendency for top-down agendas from the group with the funding, these researchers can control North-South "partnerships" in a semi-colonial fashion (Rodríguez et al. 2007, Boshoff 2009). International research proposals involving Neotropical birds, especially long-distance migrants to North America, frequently ignore or minimize critical Neotropical perspectives. The culture and values of academia push researchers (from North and South) to prioritize publishing as many papers as possible in high-impact journals (in English), rather than taking the time to include policy makers and other people local to the study area in the design and impact of the research. ***Evaluation of research contributions.*** Academic evaluation of Neotropical researchers relies heavily on metrics set by northern-based publishing companies, which has led to the prioritization of international agendas over regional needs (Monjeau et al. 2013) and often discounts Natural History research as "descriptive" (Beehler 2010, Ríos-Saldaña et al. 2018). The continuous disincentive to Natural History research produces a vicious cycle that undermines the international impact of regional journals (Monjeau et al. 2013, Devenish-Nelson et al. 2017, Rau et al. 2017) and the training and retention of professional field ornithologists in the Neotropics. ***Inequalities among individuals.*** Legacies of internal colonialism (i.e. colonialism within our own countries; Casanova 1965) continue to restrict access to scientific training primarily to racially and economically privileged classes (Torres and Schugurensky 2002). Pigmentocracy, political instability, and economic uncertainty select the groups that have access to higher education and financial resources, resulting in significant regional and racial bias to who produces scientific knowledge and who continues to be sidelined, namely Black, Brown, and Indigenous Peoples (McCowan 2007). In many countries (e.g., Bolivia) a career in science is likely to result in a marginal, unstable income, and is therefore not a viable option for most people. Throughout the Neotropics, ornithology is dominated by heterosexual cis men. Women and members of the LGBTQIA+ community, especially trans people, have been vastly excluded because of misogyny and homophobia, which are pervasive in the region (Salerno et al. 2019). ***Inequalities among regions.*** In some countries (e.g., Argentina, Brazil, Chile, Colombia, Mexico), academic centers, scientists, and projects are concentrated in major cities, biasing knowledge toward regions where natural habitats have been drastically transformed. In others (e.g., Ecuador), research is concentrated in specific geographic locations of interest to foreign scientists (Galapagos Islands, Amazonia), while the rest of the country remains generally neglected. ***Inequalities among countries.*** Whereas some countries have strong institutional research capacity (e.g., Mexico, Brazil, Argentina), others suffer from a lack of ornithologists at universities, graduate programs that can host ornithological research, and employment opportunities for ornithologists across institutions and agencies (e.g., Dominican Republic). Institutional research capacity is cyclically under threat because of political shifts.

Table 3. Continued.

Barrier	Examples
Restricted dissemination of knowledge produced in the Neotropics	***Enforced language hegemony.*** The increased time, costs, and challenges of publishing in English slow the advancement of knowledge and exclude many students from making impactful contributions to science (Hanauer and Englander 2011, Ramírez-Castañeda 2020). Studies written in languages other than English are much less likely to be cited (Di Bitetti and Ferreras 2017), creating unrealistic standards of English proficiency that are enforced within our own countries (Monge-Nájera 2002), biasing the construction of knowledge (Konno et al. 2020, Angulo et al. 2021) and excluding students from career-determining opportunities of scientific training and networking based on a skill strongly correlated with inherited socioeconomic status.
	Citation bias towards the Global North. Citations and global reviews consistently overlook and under-represent knowledge produced by minoritized groups (Hofstra et al. 2020), including ornithologists in the Neotropics (Areta and Juhant 2019, MacGregor-Fors et al. 2020). This trend is especially clear in the case of articles published in local or regional journals (often in Spanish or Portuguese; Di Bitetti and Ferreras 2017). Even authors from the Neotropics exhibit this citation bias, perhaps driven to select the most prominent references from Europe and North America, to frame their work in a context familiar to and respected by reviewers (Meneghini et al. 2008). Search engines like Google Scholar reinforce these biases by ranking articles by citation count, thereby burying less-cited papers that may be just as relevant (Matthew Effect, Beel and Gipp 2009). The names of authors from the Neotropics are often improperly or incompletely cited. The centuries-old tradition of using both parents' last names, widespread in Latin American and the Caribbean, has not been assimilated by most journals, resulting in a lower number of citations for authors with two last (family) names (Ruelas Inzunza 2009).
	Implicit bias. Authors with Neotropical affiliations face implicit bias during the submission process at high-impact journals (Meneghini et al. 2008).
Logistical limitations	***Lack of government and institutional support.*** Although birds feature prominently in Neotropical cultures (Ibarra et al. 2013), ornithology is not a priority for most governments, even in countries with many ornithologists (e.g., Argentina and Brazil). Many initiatives (including conferences, journals, monitoring programs, and records committees) lack institutional support, depending on the commitment of individuals, so that they are difficult to sustain in the long-term. Many countries in the Neotropics are currently in the hands of political leaders who defund academic institutions (Torres and Schugurensky 2002), dismantle environmental policies (Siqueira-Gay et al. 2020, Barbosa et al. 2021), and even persecute local scientists. In several countries in Latin America and the Caribbean, insufficient support during the COVID-19 pandemic has had drastic negative effects on the training of the next generation of ornithologists, and many early career professionals are leaving the field due to economic uncertainty and lack of job security (Bottan et al. 2020, Dávalos et al. 2020, Pérez Ortega and Wessel 2020).
	Equipment and supplies. Many of the supplies and basic equipment taken for granted by northern researchers are unavailable in Neotropical countries and require complicated and expensive logistics to import legally, or time to make from scratch. For example, banders working in the Neotropics face a constant challenge in acquiring the numbered aluminum bands that are fundamental to any study capturing birds, and monitoring programs can be paused for years because bands are unavailable.
	Permits. Permitting varies widely by country and jurisdiction, with some field research (e.g., in parts of Brazil) requiring permits from up to five organizations, each with its own requirements (e.g., an employee of the organization must accompany the researcher in the field, complicating the schedule). In some countries (e.g., Venezuela), obtaining permits has become virtually impossible for many projects. Permits are also required to import equipment, funds, and supplies to many areas or to move samples for analysis and can represent an insurmountable bureaucratic barrier.
	Specimens. A large part of the Neotropical bird collection is held in museums in the Global North; visiting these collections requires funding and visas that are inaccessible to many researchers from the Neotropics.
	Field access and safety. In the second half of the 20th century, ornithologists and other scientists in many Neotropical countries suffered direct persecution (torture, imprisonment, exile) and massive interruptions to research programs during periods of socioeconomic and political turmoil, including USA-supported decades-long dictatorships (e.g., Bekerman 2009, Rapoport 2015, Fraga 2019). For many of us (ornithologists of the 21st century), this context framed our childhoods and/or early careers. Across many parts of the Neotropics, local ornithologists and allies are still attacked, kidnapped, and even murdered during fieldwork and bird conservation activities (Malakoff 2004, Mifsut and Barrero 2012, Méndez 2021, Palomino 2021).

the bird's appearance, indicate a geographic location, or honor a notable person, local names more often recognize birds by their vocalizations, behavior, cultural significance, the time of year they are present, or their habitat (Ibarra et al. 2020b). In La Araucanía Region of Chile, for example, Mapuzugun bird names include the onomatopoeic fío-fío (*Elaenia albiceps*), chuncho (*Glaucidium nana*), and pitío (*Colaptes pitius*), and the behaviorally derived küchag (which leaves waste after eating; *Phrygilus patagonicus*), which carry important local information about how the birds are experienced (Ibarra et al. 2020b). For comparison, their English names are White-crested Elaenia, Austral Pygmy-Owl, Chilean Flicker, and Patagonian Sierra Finch, which focus on the type of information that interests foreign ornithologists. The dominance of English terms can erroneously signal that the enjoyment and knowledge of birds is for the English-speaking (i.e. educated or wealthy) classes, and that bird identification occurs primarily through appearance (which requires purchase of binoculars) rather than vocalizations or other cues. The spread of nomenclatural standardization from English to Spanish (e.g., Bernis et al. 1994 and subsequent) has resulted in the use of standardized names in citizen-science and field guide projects that further erase the rich cultural legacy and understanding of bird behavior reflected in local names (e.g., Navarro 2015).

CONTRASTING PERSPECTIVES ON NEOTROPICAL ORNITHOLOGY

The Problem of Discovery Narratives

Short-term expeditionists from Europe and the USA contributed to the development of ornithology in the Neotropics, particularly in taxonomy and systematics (e.g., Alexander Wetmore, Frank Chapman, and Storrs Olson; Freile and Córdoba 2008, Levy 2008, Hume 2021). However, to access research sites, expeditionists frequently aligned themselves with imperial or commercial interests (such as territorial acquisition and resource extraction; Naranjo 2008, Raby 2017a). Their research practices generally followed the same unequal exchange model as the economy: foreign companies exported raw materials northward, to be returned to Latin America as finished products; foreign researchers exported bird specimens northward, where they served to formulate theories that were sent back to Latin America for "consumption" (Quintero 2011). The more significant, long-term contributions to Neotropical ornithology came from people (whether local- or foreign-born) who lived in the Neotropics and invested in local capacity, often by founding schools, ornithological collections, or long-term research programs (e.g., among those now deceased, Juan Gundlach in Cuba; James W. Wiley in Cuba, Puerto Rico, and elsewhere in the Caribbean; Gustavo Kattan in Colombia; William H. Phelps, William H. Phelps Jr., and Adolfo Pons in Venezuela; Helmut Sick, Emilie Snethlage, William Belton, and Fernando Novaes in Brazil; Miguel Lillo, Roberto Dabbene, Claes Christian Olrog, and Eduardo Tonni in Argentina; Maria Koepcke in Peru; Allan R. Phillips, Miguel Álvarez del Toro, and Mario A. Ramos in Mexico; and Daniel González Acuña in Chile, to name just a few; Vuilleumier 1995,Cuarón 1997, Silva et al. 2005, Di Giacomo and Di Giacomo 2008, Levy 2008, Junghans 2009, Voss 2009, López Ordóñez et al. 2014, Snyder et al. 2019, Pizarro et al. 2020, Gomez et al. 2022).

Discovery narratives centered on foreign researchers are common across scientific disciplines, and they perpetuate the colonialist discourse that phenomena and species remain "unknown" until they are "discovered" or named (by the right person). For example, Ted Parker is remembered for his "singular skills of observation" (Lees et al. 2020:10) leading to the description of 10 taxa, and his popularization of vocalizations as a critical tool for surveying birds in tropical forests, at a time (the 1970s) when "the voices of most Neotropical birds were unknown" (Remsen and Schulenberg 1997:10). However, it is critical to recognize that long before Europeans colonized the Americas, Indigenous Peoples had already identified, named, and catalogued, through oral tradition, thousands of bird vocalizations, often experiencing and identifying birds more by ear than visually (Berlin 1981, Cebolla Badie 2000, 2013, Ibarra and Pizarro 2016, Madroño 2016, Ibarra et al. 2020b). For example, Chachugi (2013) explains how the Aché Indigenous language (in the region currently known as Paraguay) includes specific words that represent types of bird sounds associated with specific contexts (e.g., lek, alarm, mixed-species flock) and environmental conditions (e.g., open understory at display arenas). Chachugi and other Aché adults recall how, in their childhood, they were instructed by their grandparents to imitate the vocalizations of a wide diversity of bird species, from the tiny kwi'i (Olivaceous Woodcreeper, *Sittasomus griseicapillus*) to the djaku (Black-fronted Piping-Guan, *Pipile jacutinga*). The Aché people exhibit an extraordinary ability (by the standards of western scientists) to remember and reproduce these sounds, using them as "playback" to attract and hunt adult birds, and to find nests. Parker played an important role in popularizing the use of bird vocalizations among ornithologists, but for the Aché and many other Indigenous Peoples of the Americas, the use of bird vocalizations was already an integral part of their daily lives.

Among western scientists, too, knowledge of bird vocalizations in the Neotropics was and is constructed collectively, and the story is much more complex and interesting than a simple discovery narrative would have us believe. The use of bioacoustics to identify Neotropical birds dates at least to 1831 in Brazil (Toledo and Araujo 2017). Johan Dalgas Frisch released his first record (Cantos das Aves do Brasil) simultaneously in Rio, New York, and London in 1962 (Gorgulho et al. 2005), and Jacques Vielliard recorded and described birds by sound as early as 1974 (e.g., Vielliard 1983). In Venezuela, Paul A. Schwartz recorded around 800 species by the 1970s, nearly 1/4 of all South American birds (Gorton 2010). In Argentina, Roberto Straneck began recording birds in 1964, contributed to the archive of natural audio recordings of the Museo Argentino de Ciencias Naturales and, in 1990, published popular guides to bird sounds of Argentina that were critical to expanding knowledge of bird distributions and abundance in the Southern Cone (e.g., Straneck 1990, Fernández Balboa 2016). Schwartz, Straneck, and Vielliard pioneered the use of bioacoustics as a taxonomic tool (Schwartz 1968, 1972, Straneck 1987, 1993, 2007, Vielliard 1990, Straneck and Vidoz 1995).

Although discovery narratives are part of the colonialist scientific legacy we have inherited, we must conceptualize an ornithological future without them. It is worthwhile to question our own roles as authors in perpetuating the idea that phenomena remain "unknown" until they are popularized in

North America and Europe (see Bauer et al. 2018). Breaking our reliance on discovery narratives also means acknowledging the role of colonialism in the ongoing suppression of ancestral knowledge (Barreau et al. 2016). For those of us working in the Neotropics, it means justifying our research in ways that acknowledge the work already done in the region, rather than citing studies from the Global North and then stating that "little is known" about our topic in the Neotropics. We can all highlight the collective process of building knowledge, taking into account not only research that is of interest to the scientific community of Europe and the USA, but also, critically, contributions that advance local and regional agendas.

The Natural History Gap

Building on the framework of seven biological shortfalls laid out by Hortal et al. (2015), Lees et al. (2020) proposed an eighth "Parkerian Shortfall," a gap in knowledge of natural history. They justified this proposal on the basis of missing information about foraging behavior, diet, nesting, and vocalizations, primarily in English-language resources, especially the Birds of the World platform (https://birdsoftheworld.org). Birds of the World is a highly used and cited online resource maintained by the Cornell Lab of Ornithology and a result of the fusion of the Handbook of the Birds of the World Alive (del Hoyo 2015), Birds of North America (https://birdsna.org/, a domain redirecting users to Birds of the World), Neotropical Birds Online (http://neotropical.birds.cornell.edu/ formerly freely accessible resource now redirecting users to Birds of the World), and other resources. As an example of the natural history gap, Lees et al. (2020) stated that even basic nest descriptions are not listed for 328 of a sample of 1,018 Neotropical species across nine families in Birds of the World. However, Birds of the World (and other such compilations) are not reliable yardsticks by which to assess recent advances in Neotropical ornithology. In November 2021, we conducted a cursory review of Neotropical species whose nests were described up to 2017, and we found that Birds of the World continued to list 59 of these species without nesting information, despite the published descriptions (Table 4). The primary publications arose in online searches and were freely available to download (unlike the species accounts in Birds of the World, which are behind a paywall). According to Fierro-Calderón et al. (2021), in the past 20 years, research teams in Venezuela, Argentina, Brazil, Paraguay, Ecuador, Colombia, and Peru have presented the first descriptions of the nests of over 100 species. We infer that Birds of the World may, at present, omit about half of the Neotropical literature presenting new nest descriptions in the last two decades.

Beyond the species with completely missing nest descriptions, many Neotropical species continue to be listed in Birds of the World with a rudimentary nest description and a statement of "no further information", when in fact journal articles and graduate theses (indexed in Google Scholar and freely available online) have addressed other aspects of their reproductive biology, sometimes extensively and with important implications for ecology and evolution (Table 4). Because Birds of the World omits much of the primary literature produced in the Neotropics over the last two decades, it does not accurately reflect advances in our natural history knowledge since the death of Ted Parker in 1993. Researchers should not use it to assess advances in knowledge of Neotropical birds, just as they would not use it to assess advances in knowledge of Nearctic birds over the same time period. Over-reliance on Birds of the World, rather than primary literature, broadens the natural history gap in the Neotropics by undermining the value of research in this field.

Although we critique the methods used by Lees et al. (2020), we nonetheless agree that there is a real natural history gap in Neotropical ornithology. This gap is maintained by a chronic sidelining of natural history and other field research by academic institutions and editorial policies. Lees et al. (2020:11) urge readers to "encourage, support, and value both basic science and natural history descriptions of Neotropical birds". As people who already encourage, support, and value natural history, we are caught in a dilemma. For many of us, natural history is a passion, as well as a critical foundation for our ecological or phylogenetic studies and conservation baselines. However, too often, our results are excluded from publication in global-scope journals (the ones highly valued by our employers), which has a negative impact on our chances of obtaining funding, with the consequent damaging cascade effect on our research and training capacity. When our results are published (Table 4), they are under-cited. Yet we are asked, by the very institutions that ignore our natural history studies, to generate more natural history data, not for publication in major journals, but for online databases, such as eBird (http://ebird.org, Cornell Lab of Ornithology) or in "regional" journals regarded as second-tier outlets for our research. To stop perpetuating the natural history gap, our colleagues who wish to encourage natural history research should start valuing it in the currencies of academia: funding, high-impact journals, and citations.

Tools and Approaches for Neotropical Ornithology

When considering tools and remedial approaches to fill "gaps" in Neotropical ornithology, it is important to take into account the limitations imposed by global inequities in access to funding and equipment, and the social implications of technology. For example, in avian parasitology, microscopy is a relatively cheap and data-rich method to identify species, suitable for most regional labs. However, many reviewers do not recommend accepting manuscripts based solely on microscopy. Instead, they urge Neotropical researchers to use more expensive techniques (such as Polymerase Chain Reaction amplification of molecular markers), which are often unnecessary to support the results already obtained and create financial and logistical complications. DNA barcoding and Next Generation Sequencing offer powerful tools for understanding our birds; however, because they are not available in many countries of Latin America and the Caribbean, Neotropical researchers can often only access these tools by relying on foreign collaborators, frequently in a context of unequal power dynamics.

Even relatively simple methods can get complicated in the Neotropics. Mexico, for example, lacks a centralized banding system and the infrastructure and operations teams to support it. Instead, it relies on partial participation in the USA system, under conditions that are often unfavorable for Mexican banders. Banders in Mexico can use self-made bands or foreign-purchased bands, but the only way to participate in a centralized banding system is to use official U.S. Geological Survey's Bird Band Laboratory (BBL) bands, which require BBL permits. For legal reasons, master banding permits are

TABLE 4. Examples of information about the reproductive biology of some Neotropical birds, published by 2017, which remained excluded from Birds of the World as of November 2021. The order of taxa follows Remsen et al. (2021).

Taxonomy	Published breeding information	Source
A. Example species without nest descriptions in Birds of the World		
Band-tailed Nightjar (*Systellura longirostris*)	Nest, eggs, nestlings	Balderrama et al. (2008)
Rothschild's Swift (*Cypseloides rothschildi*)	Nest, eggs	Dabbene (1918) and Smyth (1928)
Slaty Gnateater (*Conopophaga ardesiaca*)	Nest, eggs	Sánchez and Aponte (2006)
Green Thorntail (*Discosura conversii*)	Nest architecture, egg	Sánchez et al. (2016)
Bearded Mountaineer (*Oreonympha nobilis*)	Nest, eggs	Córdoba-Córdoba et al. (2012)
Garden Emerald (*Chlorostilbon assimilis*)	Nest architecture, parental care	Sandoval and Escalante (2010)
Chestnut-headed Crake (*Anurolimnas castaneiceps*)	Nest, eggs	Buitrón Jurado et al. (2011)
Andean Motmot (*Momotus aequatorialis*)	Nest, eggs	Greeney et al. (2006)
Mottled Piculet (*Picumnus nebulosus*)	Nest, clutch, incubation and nestling periods, parental care, nestling growth	Pichorim (2006)
Grayish Piculet (*Picumnus granadensis*)	Nest, clutch, nest attentiveness, incubation bouts, nestlings	Sedano et al. (2008)
Versicolored Barbet (*Eubucco versicolor*)	Nest, parental care	Avalos and Saavedra (2016)
Rusty-faced Parrot (*Hapalopsittaca amazonina*)	Courtship, nest placement, laying, incubation and nestling periods, parental care, fledging	Sanabria Mejía (2010)
Brown-breasted Parakeet (*Pyrrhura calliptera*)	Nest, laying, nestling growth	Arenas-Mosquera (2011)
Caatinga Antwren (*Radinopsyche sellowi*)	Nest construction, clutch, parental care	da Silva et al. (2008)
Band-tailed Antshrike (*Thamnophilus melanothorax*)	Nest	Zyskowski et al. (2008)
Spot-backed Antwren (*Herpsilochmus dorsimaculatus*)	Nest, fledgling	Melo and Xavier (2017)
Pectoral Antwren (*Herpsilochmus pectoralis*)	Nest, clutch	da Silva et al. (2008)
Leaden Antwren (*Myrmotherula assimilis*)	Nest, clutch	Leite et al. (2016)
White-lined Antbird (*Myrmoborus lophotes*)	Nest, clutch, parental care	Lebbin et al. (2007)
Stripe-headed Antpitta (*Grallaria andicolus*)	Nest architecture, placement, eggs, nestlings	Greeney (2012)
Speckle-breasted Antpitta (*Cryptopezus nattereri*)	Nest, clutch, parental care	Chachugi (2013) and Bodrati and Di Sallo (2016)
White-browed Antpitta (*Hylopezus ochroleucus*)	Nest, nestlings, distraction display	Greeney et al. (2016)
Thicket Antpitta (*Myrmothera dives*)	Nest, nestlings, nestling diet	Greeney and Vargas-Jiménez (2017)
Trilling Tapaculo (*Scytalopus parvirostris*)	Nest, clutch, nestling growth rate, nest attentiveness	Smith and Londoño (2014)
Long-tailed Tapaculo (*Scytalopus micropterus*)	Nest, nestlings, nestling diet	Greeney and Gelis (2005)
Nariño Tapaculo (*Scytalopus vicinior*)	Nest, clutch, nestling	Arcos-Torres and Solano-Ugalde (2007)
Sharp-billed Treehunter (*Heliobletus contaminatus*)	Nest, clutch, nestlings, parental care	Cockle and Bodrati (2017)
Black-capped Foliage-gleaner (*Philydor atricapillus*)	Nest	Tanaka et al. (2016)
Ochre-breasted Foliage-gleaner (*Anabacerthia lichtensteini*)	Nest, nestlings, parental care	Saibene (1995) and Cockle and Bodrati (2017)
White-browed Spinetail (*Hellmayrea gularis*)	Nest	Greeney and Zyskowski (2008)
Maquis Canastero (*Asthenes heterura*)	Nest, nest-site	Martínez et al. (2011)
Serra do Mar Tyrant-Manakin (*Neopelma chrysolophum*)	Nest	Kirwan (2016)
Yungas Manakin (*Chiroxiphia boliviana*)	Nest, eggs, nestling growth, parental care	Hazlehurst and Londoño (2012)

Table 4. Continued.

Taxonomy	Published breeding information	Source
Round-tailed Manakin (*Ceratopipra chloromeros*)	Nest, construction	Doucet and Mennill (2005)
Hooded Berryeater (*Carpornis cucullata*)	Nest architecture and placement (variation)	Maurício (2013)
Fiery-throated Fruiteater (*Pipreola chlorolepidota*)	Nest construction, clutch, nestlings, nestling period	Gelis et al. (2006)
Black-capped Piprites (*Piprites pileata*)	Nest	Cockle et al. (2008)
Bronze-olive Pygmy-Tyrant (*Pseudotriccus pelzelni*)	Nest, clutch, nestlings, parental care	Greeney et al. (2005)
Rufous-headed Pygmy-Tyrant (*Pseudotriccus ruficeps*)	Laying, clutch, incubation period, nestlings	Greeney (2006)
Plain Tyrannulet (*Inezia inornata*)	Nest, eggs	Di Giacomo (2005)
Ash-breasted Tit-Tyrant (*Anairetes alpinus*)	Nest, eggs, nestlings, parental care	Barnes (2009) and Greeney (2013)
Juan Fernandez Tit-Tyrant (*Anairetes fernandezianus*)	Nest, clutch, parental care	Hahn (2006)
Agile Tit-Tyrant (*Uromyias agilis*)	Nest, nestlings, adult behavior, ectoparasites	Bonier et al. (2008)
Rufous Mourner (*Rhytipterna holerythra*)	Nest construction, eggs	Snow et al. (2017)
Pale-edged Flycatcher (*Myiarchus cephalotes*)	Nest construction, clutch, incubation period, nestling period, nest attentiveness, nestling diet, fledgling period	Greeney and Dyrcz (2011)
White-rumped Monjita (*Xolmis velatus*)	Nest, eggs	Lombardi et al. (2010)
Salinas Monjita (*Neoxolmis salinarum*)	Nest, eggs, nestlings	Cobos and Miatello (2001)
Rufous-bellied Bush-Tyrant (*Myiotheretes fuscorufus*)	Nest, eggs, nestling growth, parental care	Kingwell and Londoño (2015)
Black-billed Peppershrike (*Cyclarhis nigrirostris*)	Nest architecture, eggs	Strewe (2001) and David (2011)
Gray-mantled Wren (*Odontorchilus branickii*)	Nest placement, nest building	Johnson (2017)
Niceforo's Wren (*Thryophilus nicefori*)	Nest	Valderrama et al. (2007)
White-eared Solitaire (*Entomodestes leucotis*)	Nest	Rheindt and Quispe Vela (2008)
Hellmayr's Pipit (*Anthus hellmayri*)	Nest, eggs	Belton (1985), Güller et al. (2004), de la Peña (2005) and Lombardi et al. (2010)
Carmiol's Tanager (*Chlorothraupis carmioli*)	Nest, eggs, parental care	Martínez and Rechberger (2011)
Cinnamon-tailed Sparrow (*Peucaea sumichrasti*)	Nest, egg	McAndrews et al. (2008)
Plain-colored Seedeater (*Catamenia inornata*)	Nest, eggs	Peraza (2011)
Paramo Seedeater (*Catamenia homochroa*)	Nest, eggs	Chaparro-Herrera et al. (2015)
Masked Saltator (*Saltator cinctus*)	Nest, eggs, incubation period, nestling growth, nest attentiveness	Ortiz Mendoza (2013)
Multicolored Tanager (*Chlorochrysa nitidissima*)	Nest, clutch, nestling growth, parental care	Loaiza-Muñoz et al. (2017)
B. Example species with only a photo or very limited nest description in Birds of the World		
Small-billed Tinamou (*Crypturellus parvirostris*)	Nesting period, nest, eggs, clutch size, incubation period, nest defense	Marini et al. (2012)
Picazuro Pigeon (*Patagioenas picazuro*)	Nesting period, nest, eggs, incubation period, nestling period	Marini et al. (2010)
Scissor-tailed Nightjar (*Hydropsalis torquata*)	Nestlings, parental care, apparent lack of territoriality, nesting ecology, nest defense	Pautasso and Cazenave (2002) and Marini et al. (2012)
Pavonine Quetzal (*Pharomachrus pavoninus*)	Clutch, incubation, provisioning, nestling period, nestling diet, fledging	Lebbin (2007)
Buff-bellied Puffbird (*Notharchus swainsoni*)	Clutch, nestling period, parental care	Matthews and Smith (2017)

Table 4. Continued.

Taxonomy	Published breeding information	Source
Ochre-collared Piculet (*Picumnus temminckii*)	Nest, clutch, incubation and nestling periods, nestlings, nest attentiveness, nestling diet, social roosting, parental care, evolution	Bodrati et al. (2015)
Chestnut-capped Foliage-gleaner (*Clibanornis rectirostris*)	Eggs, nestlings, pair fidelity, territoriality, parental care, nest success, fledgling movements	Faria et al. (2008)
Swallow-tailed Manakin (*Chiroxiphia caudata*)	Mating and social systems, incubation and nestling periods, daily nest survival, attentiveness during incubation and nestling periods, comparative life history	Brodt et al. (2014), Bobato (2016) and Zima et al. (2017)
Three-wattled Bellbird (*Procnias tricarunculatus*)	Nest construction, courtship, copulation	Sánchez et al. (2013)
Suiriri Flycatcher (*Suiriri suiriri*)	Nesting ecology, nest survival, nestling development, *Philornis* parasitism, parental care, renesting	Lopes and Marini (2005a, 2005b, 2006) and Marini et al. (2012)
Chapada Flycatcher (*Guyramemua affine*)	Nesting ecology, nest survival, nestling development, *Philornis* parasitism, parental care, renesting	Lopes and Marini (2005a, 2005b, 2006), França and Marini (2009, 2010)
Sulphur-rumped Flycatcher (*Myiobius barbatus*)	Nest, clutch, parental care	Greeney and Gelis (2007)
Gray-backed Tachuri (*Polystictus superciliaris*)	Clutch, incubation and nestling periods, nestling parasitism, parental care, daily nest survival, breeding synchrony, renesting	Hoffman and Rodrigues (2011)
Hudson's Black-Tyrant (*Knipolegus hudsoni*)	Nest materials, eggs	Lucero (2014)
Cipo Canastero (*Asthenes luizae*)	Nest characteristics, nesting behavior and ecology, brood parasitism, comparative life history/phylogeny	Costa (2011, 2015)
Red-billed Pied Tanager (*Lamprospiza melanoleuca*)	Nest, clutch, parental behavior	Melo and Xavier (2017)
Carmiol's Tanager (*Chlorothraupis carmioli*)	Clutch, nest attentiveness, incubation and nestling periods, incubation behavior, nestling growth, comparative life history/phylogeny	Valdez-Juarez and Londoño (2016)
Scrub Tanager (*Stilpnia vitriolina*)	Nest architecture, placement, clutch, eggs, nestlings, brooding behavior	Freile (2015)
Pale-throated Pampa-Finch (*Embernagra longicauda*)	Nest architecture, nest materials, nest-site, clutch, eggs, nestlings	Freitas et al. (2009) and Rodrigues et al. (2009)

only available to USA and Canadian nationals (following a 1923 treaty between these two countries), and, in practice, to foreign nationals who are residents of these two countries (A. Celis-Murillo, BBL Chief, pers. com.). Mexican banders based in Mexico, regardless of their experience, fall outside the legal jurisdiction of USA or Canadian law. Therefore, to participate in this centralized banding system, they need to take a paid NABC (North American Banding Council) certification course, and (in the best-case scenario) band birds using BBL bands as subpermitees of a North American permit holder. These requirements impose both a financial cost and a loss of regional autonomy over the data (however, the NABC and the Association of Field Ornithologists offer partial financial support for groups or individuals pursuing these certifications, https://nabanding.net/grants/). Moreover, BBL bands are restricted to species found in the USA, which excludes many tropical, non-migratory species in Mexico. The creation of banding systems is a pending assignment for Neotropical countries: the USA model of a government-administered banding system has been proposed to many Latin American and Caribbean governments for decades with little progress. Alternative models exist, such as the ca. 30 independent bird ringing national/regional centers in Europe, many of them run by non-profits (e.g., British Trust for Ornithology) that contribute their records to the unified Euring Data Bank in the Netherlands (https://euring.org/).

Online data platforms, such as eBird (Cornell Laboratory of Ornithology) and the Global Biodiversity Information Facility (GBIF) can help advance knowledge of macroecology, distributions, relative abundance, and migration, but can also unintentionally reinforce the *status quo* of colonizer–colonized relationships. eBird was initially developed to harness the data produced by "everyday birders", tapping into the "healthy competition" of "the birding community": people driven "to the far ends of the earth" by "the desire to find and identify birds, as well as the accolades that occur as a result of their discoveries" (Sullivan et al. 2009:2285). In the USA, where eBird originated, 95% of eBirders are white (Rutter et al. 2021). They remain "highly specialized recreationists" motivated by competition and achievement (Rosenblatt et al. 2022). In Africa and the Caribbean, where white people are a minority in the population, they nevertheless represent most of the top eBird contributors (Scott 2021). For the GBIF, data coverage is strongly and positively related to GDP per capita, with 79% of data coming from just ten countries, and very little coverage of tropical countries despite much higher species richness (Hughes et al. 2021). We stress that the first step in reducing racial and geographical biases in representation in such systems is not encouraging more people from minoritized groups to upload data to the platform, but reflecting carefully on how the platform's origin, objectives, culture, and design might be excluding or exploiting these populations.

In the Neotropics, some researchers benefit from eBird (mainly those who work with big data) while others (e.g., naturalists working with their own data) lose protagonism, for example, when eBird records are cited instead of published papers. Because eBird requires a single, centralized list of bird common names for each country and language, it can, unintentionally, contribute to the erasure of cultural diversity (and knowledge about bird behavior and vocalizations) associated with the diversity of local names. Importantly, while the competitive model of birding has some tradition with highly specialized white recreationists in the USA, its popularization across the Neotropics supplants local traditions of cost-free enjoyment and knowledge of birds (without binoculars or specialized equipment). eBird and other "community science" projects often imply the flow of data from local communities to academic researchers in major centers, including many in the Global North. Rather than further expanding the eBird platform to incorporate natural history observations (as recommended by Lees et al. 2020), we suggest investing in a thorough examination of the unintended social costs of the current system.

The growing movement toward open data and author-paid open access publication models will increase power imbalances if we do not directly address inequalities inherent in these systems (Fontúrbel and Vizentin-Bugoni 2021, Smith et al. 2021). While free access to publications is laudable, most Neotropical researchers cannot afford to pay for open access, which casts authors in the role of clients, rather than creators of knowledge. Likewise, we need to consider how open data policies might be giving researchers at powerful institutions access to data from Indigenous land and the Global South, without involving or consulting the relevant communities (Serwadda et al. 2018, Liboiron 2021). In contrast, open software such as R (R Core Team 2021) and QGIS (www.qgis.org), online data-sharing platforms such as xeno-canto (www.xeno-canto.org) and WikiAves (www.wikiaves.com.br), searchable databases such as VertNet (vertnet.org), and online platforms that allow free sharing and access to scientific literature, have revolutionized and democratized our ability to study Neotropical birds. When deciding how to produce and share ornithological knowledge (e.g., moving journals to Open Access), we urge colleagues to choose options that reduce, rather than exacerbate, historical inequalities (e.g., the Diamond Open Access model widely used in Latin America; Alperin 2022, Cabrera and Saraiva 2022, Ross-Hellauer 2022, Ruelas Inzunza et al. 2023).

WHY SCIENCE NEEDS VIEWS FROM THE NEOTROPICS: FOUR EXAMPLES

In his classic work, "The Structure of Scientific Revolutions", Kuhn (1962) proposed that to move beyond static "normal science" we need paradigm shifts, which are frequently generated by outsiders to a field. Not all researchers believe that there can or should be a universal roadmap for Neotropical ornithology, and creating one was not an aim of this paper. Instead, for the interest of readers, we offer a few examples of how the northern lens (regardless of researcher location) has affected the pace, direction, and conclusions of bird research and conservation efforts, and how perspectives from the south can shift our understanding and direction. We stress, however, that exclusion from science is an ethical issue, and needs to be addressed regardless of how it affects the development of a field.

Woodpeckers as Ecosystem Engineers

Across North America, woodpeckers produce nearly all of the cavities used by non-excavators (birds that rely on existing tree cavities for nesting). Because nest sites can limit population size and distribution of non-excavators, woodpeckers are often considered to be keystone taxa or ecosystem engineers that facilitate the presence and abundance of other species

(e.g., Daily et al. 1993). Based on this North temperate framework—and noting that in temperate-zone forests up to half of the species comprising bird communities may depend on cavities in dead trees for nesting—Gibbs et al. (1993) examined the availability of dead trees (assumed important for woodpeckers to excavate) and the ratio of non-excavator species to excavator species along a latitudinal gradient from central Venezuela to northeastern USA. On finding few standing dead trees and a high ratio of non-excavators to excavators at more tropical latitudes, they proposed that limitations on nest-site availability could be more severe in lower than higher latitude forests and recommended that tropical forest managers follow their north temperate counterparts in developing forestry practices to maintain dead trees for birds.

The framework of woodpeckers as key facilitators of non-excavators was later used to examine relationships between the richness and abundance of woodpeckers and non-excavators. While correlations in richness can be found at global scales and continue to be interpreted within the framework of cavity facilitation (e.g., van der Hoek et al. 2020), these correlations are rarely detected at local scales within the Neotropics (e.g., Sandoval and Barrantes 2009, Siqueira Pereira et al. 2009). Indeed, we now know that in the Neotropics (and much of the world outside of North America), woodpeckers do not provide most of the cavities used by non-excavators (Cornelius et al. 2008, Cockle et al. 2011, Ruggera et al. 2016, Altamirano et al. 2017), a pattern that was likely evident to Indigenous Peoples and local naturalists in the Neotropics, whose knowledge was not included in the imported framework. Correlations between woodpecker and non-excavator richness in the Neotropics (and likely in many parts of the world) are more likely related to shared habitat associations and macro-ecological gradients in species richness (e.g., related to climate) than to facilitation. Although exceptions exist, the framework of woodpeckers as ecosystem engineers is generally inappropriate for most Neotropical forests.

Replication of Latitudinal Gradients

In the book "Behavioral Ecology of Tropical Birds", Stutchbury and Morton (2001) recognized that temperate-zone birds have received most scientific attention but may in fact be atypical. As an example, they described much lower rates of extra-pair fertilization (EPF; resulting from copulations outside the pair bond) in socially monogamous birds in tropical vs. temperate regions. They suggested that EPF is probably unusual in socially monogamous tropical species because tropical birds have small testes (i.e. less potential for sperm competition) and have extended breeding seasons, and they hypothesized breeding synchrony to be a main driver of EPF. Although based on only seven species from the tropics (three in Panama and one each in Hawaii, Galapagos, Venezuela, and northeastern Australia), and lacking data on south-temperate species, the purported latitudinal pattern and hypothesis regarding breeding synchrony remained for years (Stutchbury and Morton 2008). Macedo et al. (2008) pointed out numerous shortcomings to these ideas, including limited knowledge of the latitudinal trends in testes size, and the high diversity of tropical habitat types and climatic conditions that could influence breeding synchrony. In a recent review that included studies of 33 socially monogamous species from central Mexico (19°N) to Tierra del Fuego, Argentina (54°S), Ferretti (2019) showed rates of EPF that ranged from 0 to 78% of broods, but were associated with neither latitude nor breeding synchrony.

Along similar lines, Landler et al. (2014) studied "global" trends in woodpecker cavity entrance orientation and concluded that woodpeckers are more likely to orient their cavities toward the equator with increasing latitude, likely driven by climatic factors (incident solar radiation). Unfortunately, their study did not include any data from the southern hemisphere. When Ojeda et al. (2021) examined cavity entrance orientation of woodpeckers in the Neotropics, they found no such trend. While we do not fault Landler et al. (2014) for excluding data from the Neotropics (these were not published at the time), we do suggest that perspectives from the south enrich our understanding of patterns in nature, and journals need to stop implying that northern patterns are universal (Castro Torres and Alburez-Gutierrez 2022).

"Outside the Journal Scope"

In 1969, while exiled in Venezuela, the Argentinian ecologist Eduardo H. Rapoport was working on a paper proposing that gradients in species richness reflect gradients in the size of species' latitudinal ranges, whereby range size increases with latitude (Rapoport 2015). On a visit to New York, he shared his ideas and data with the USA-based ecologist Robert MacArthur. Rapoport planned to submit his work to a Venezuelan journal, but MacArthur suggested, instead, *American Naturalist*, "to reach a wider public". Rapoport returned to Venezuela but found soldiers and tanks blocking access to his university. The military dictatorship in Argentina still prevented him from working at a university, but he took a position at Fundación Bariloche in the south of Argentina, shipping his data and notes. When the papers did not arrive, he traveled 1,600 km to obtain a truck to bring them home, to finish writing his article.

Around 1971, Rapoport submitted the manuscript to *American Naturalist*, but it was rejected as "outside the journal scope". He decided to expand the manuscript into a book, which was first published in Mexico in Spanish (Rapoport 1975), then translated to English 7 years later (Rapoport 1982). Almost 20 years after Rapoport's paper was rejected as "outside the scope" of *American Naturalist*, the USA-based ecologist George C. Stevens published a paper in *American Naturalist* (Stevens 1989) proposing that latitudinal ranges of species are generally smaller at lower latitudes than at higher latitudes, naming this correlate "Rapoport's Rule." According to Google Scholar, by July 2022 the original version of Rapoport's book in Spanish had been cited 222 times, the English version 796 times, and Stevens' paper 1981 times.

Conservation in the "American Tropics"

Throughout the 20th century, USA-based biologists positioned themselves as experts on the Neotropics, often using their country's geopolitical interests (e.g., Panama Canal, Puerto Rico, "American Tropics") to promote their research and conservation agendas (Raby 2017a, 2017b, Mohammed et al. 2022). Writing for *The Annual Review of Ecology and Systematics*, Janzen (1986:306) famously proposed that "if biologists want a tropics in which to biologize, they are going to have to buy it with care, energy, effort, strategy, tactics, time, and cash. And I cannot overemphasize the urgency as well as the responsability". Although well-meaning, this

vision reflected and espoused a northern conservation agenda that uplifted the role of foreign biologists over that of conservation movements from within the Neotropics.

Similarly, writing in *Science*, Mares (1986:738), another USA-based scientist, described the Neotropics as a "biospheric resource" for "innumerable food and drug resources" and "genetic structure[s]" of "enormous value to future generations". He argued that "by any standard, the Neotropical biota belongs not only to those countries within whose borders it lies, but to the people of the biosphere whose existence depends upon continued efficient operation of its various ecosystems". Mares (1986) evaluated the state of conservation in South America through (mostly unfavorable) comparison to the USA and proposed seven "root factors" holding back conservation in South America: lack of data, lack of money, lack of trained people, lack of a long-term plan, weak economies, short-term strategies, and an air of panic. He proposed a conservation strategy modeled on the Marshall Plan (a program led by USA Secretary of State, General George C. Marshall, providing $13 billion in aid money and technical assistance from the USA to European governments, to rebuild war-torn regions, remove trade barriers, modernize industry, and prevent the spread of communism after World War II).

Mares worked in South America for several years and collaborated with South American scientists, but he did not indicate whether these colleagues influenced his thinking on the root factors influencing conservation, or his proposed solution (namely, a large influx of funding and training from the USA). For context, in the 1970s and 1980s, the USA trained, facilitated, and funded fascist military regimes across much of South America, ostensibly to prevent the spread of communism but focused especially on the suppression of social movements that questioned the deeply stratified class system of Latin America, thus protecting US interests in the region (McSherry 2002). These dictatorships imposed neoliberal economic policies, assassinated dissident faculty and students (among many others), and rendered field work in many areas extremely dangerous. A more nuanced and inclusive approach to exploring the conservation situation might have revealed very different root factors holding back conservation, including USA intervention in South American democracies, neoliberalism, extractivism, corruption, suppression of peaceful movements for social change, or forced displacement and genocide of Indigenous Peoples. A wider variety of perspectives, from the South, might have highlighted the need to support existing conservation efforts within South America at the time (e.g., movements to defend the Amazon led by Chico Mendes and COICA [Coordinator of the Indigenous Organizations of the Amazon Basin]), and might have suggested more equitable, locally rooted, and democratic solutions for conservation moving forward.

A NEW VISION FOR NEOTROPICAL ORNITHOLOGY

We envision a future ornithology in which new models of science governance allow local ornithologists and communities to establish research priorities for the Neotropical region, respectful of regional and local worldviews and realities (e.g., as proposed by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services; Díaz et al. 2019). In this vision, ornithological societies and institutions publicly acknowledge the cultural importance of birds to Indigenous Peoples and other communities across the Neotropics, as well as the harm perpetuated by colonialism in our discipline. These organizations recognize that they are not race- and class-neutral, that access to higher education and publishing is not equitable, and that goals for diversity will not be achieved unless we remove systemic barriers to funding, publishing, and collaboration (Ahern-Dodson et al. 2020, Haines et al. 2020, Urbina-Blanco et al. 2020, Trisos et al. 2021, Cisneros et al. 2022, Kraus et al. 2022). We envision programs and policies that sustain long-term community-based research and conservation agendas (Rodríguez et al. 2007), prioritize creativity, innovation, and collective leadership (Asai 2020, Care et al. 2021), and explicitly engage in science as a knowledge dialogue (a multiparty interchange or discussion that acknowledges and integrates participants' local and regional needs and outcomes; Anderson et al. 2015).

In our vision, ornithologists (including those of us born in the Neotropics) reflect on our positionality (our economic and social advantages and disadvantages) and acknowledge that all research is shaped by philosophical foundations and assumptions. We work to understand the language and the socioeconomic and political histories of the places where we will be studying birds, and we ensure deep and meaningful local collaborations that include capacity-building in both directions (Table 5). We learn from Indigenous and other non-western approaches, not only with respect to birds but also with respect to leadership, cooperation, kinship, reciprocity, knowledge coexistence, and reconciliation (Levidow 1988, Ibarra et al. 2020a, Spiller et al. 2020, Reid et al. 2021, Singeo and Ferguson 2022, Yua et al. 2022).

HOW DO WE GET THERE?

Institutions

Reward collaboration.

Currently, our institutions may say that they value collaborations, but in practice they maintain many policies and metrics that prevent and discourage researchers from meaningful collaborations outside of a very narrowly defined academic model. These systems push researchers to prioritize their own ideas and the topics "important" in the Global North (e.g., by only rewarding first and last-author publications in high-impact journals), while barely considering broader impacts (Davies et al. 2021). Moving forward, institutions within and beyond the Neotropics should implement policies and assessment criteria that encourage researchers to step back from top–down leadership positions and instead support collective leadership that includes people outside academia. Building equitable and respectful collaborations across cultures takes time, effort, and skills in facilitation and consensus-building that often need to be acquired. Institutions can favor such collaborations by reducing their emphasis on first- or last-authorship, allowing non-academics to be co-leaders on grants, and rewarding efforts toward co-production of knowledge with Indigenous and other local communities, among other initiatives (Davies et al. 2021, Singeo and Ferguson 2022, Yua et al. 2022). We are not asking researchers from the Global North for handouts of "capacity-building" and expertise; we are asking institutions within and beyond the Neotropics to make policy changes to promote respectful

collaborations among colleagues, acknowledging and challenging the context of inequality in which we all live and conduct our research.

Shift lenses and assumptions.

Editors, reviewers, and funding boards should stop judging work from the Neotropics through a northern lens, remove financial and language barriers, and revert the prevailing belief that the role of scholars from the Global South is to produce data or case studies for theorists in the North (Eichhorn et al. 2020). Journals should update their visions around novelty and impact to remind editors and reviewers of their biases, to prevent articles from being rejected just because a reviewer thinks they are of "regional interest" or "limited scope". Journals can reduce inequities in access to publishing and citation by offering waivers for authors based in the Neotropics to publish open access and allowing authors to submit their manuscripts in the main languages of the Neotropics, with English translation on acceptance.

Encourage transparency.

Journals can discourage parachute science and improve citation ethics through their guidelines to authors, in which they could state the expectation that manuscripts on the Global South include authors affiliated within the region, regardless of the data source, and that these authors participated actively in the design and interpretation of the research, not simply acquisition of permits and collection of samples (Minasny et al. 2020, see *Conservation Letters* Guidelines for Authorship: https://conbio.onlinelibrary.wiley.com/hub/journal/1755263x/homepage/forauthors.html). Many studies that use online data sources are large-scale analyses that aim to identify priority areas for conservation and make recommendations for conservation policy, that clearly have broader impacts. They should include regional input. Journals should also state the expectation that authors have reviewed, and cited when appropriate, literature published in regional journals. To evaluate equity on a case-by-case basis and promote integrity in authorship decisions and citation practices, journals can require structured reflexivity statements that describe the ways in which equity was promoted through collaboration and citation practices (Morton et al. 2022). Similar to animal ethics and data-sharing statements, reflexivity statements on equity are structured through a series of questions during the manuscript submission process. For example, journals could ask researchers to state whether researchers or community members local to the study area or country were involved in the study design. Reflexivity statements intend to promote more ethical and equitable partnerships and better citation practices over the long-term, by inviting researchers to examine their own actions and roles in the research process, with the same rigor they apply to scrutinizing their data (Mason 1996, Guillemin and Gillam 2004, Morton et al. 2022). Ruelas Inzunza et al. (2023) recommend 14 actions that global-scope ornithological journals can undertake, to address systemic barriers and increase inclusion and recognition of researchers from Latin America and the Caribbean.

Revise research agendas.

Large ornithological societies (such as the American Ornithological Society) should revise their research agendas, with input from people across the Global South (Table 5). They should acknowledge that both hypothesis-driven research and basic biology research are critical in the Neotropics, and direct some funding and publication opportunities toward natural history. Ornithological societies publishing major bird journals can maintain or add sections or special issues dedicated to natural history, to increase the visibility of important field observations and the students, researchers, and editors who dedicate time to natural history studies (Ríos-Saldaña et al. 2018, Moore et al. 2020, Powers et al. 2021). We need many more grants along the lines of the Skutch and Bergstrom Awards from the Association of Field Ornithologists, which provide critical funding for basic biology research by Neotropical ornithologists; the Vuilleumier Fund from the Neotropical Ornithological Society, which supports thesis research by students at universities in the Neotropics; the Neotropical Bird Club Conservation Awards; and the newly established Beingolea Raptor Research Grant for Latin American and/or Caribbean nationals or residents with limited access to other funding.

Revise grant guidelines.

Organizations should scrutinize and update their grant guidelines to remove all unnecessary requirements. Funding should be available to those who cannot afford membership. Organizations should reconsider requirements to implement specific tools or approaches (such as marking individuals, hypothesis testing, uploading observations to specific websites) that may promote the organization's interests but can undermine local leadership of research and conservation agendas. Budget restrictions should be relaxed so that applicants are free to identify the items they need. Organizations within and beyond the Neotropics should ensure that the selection process of funding, awards, and training opportunities prioritizes locally designed projects led by people systemically marginalized or excluded from academic circles (because of race, gender, sexuality, economic limitations, politics, and/or disability; Table 5).

Invest in local initiatives.

Neotropical governments need to maintain and develop research programs, develop performance metrics for our own scientific challenges, and support large-scale and long-term ornithology initiatives based on locally defined research and monitoring objectives. Intentional efforts should be made to support local sound collections and museums with specimens and all their extensions, essential for systematic and taxonomic studies (Franke 2007, Ortega and Hernández 2009, Fontana et al. 2017). Collective efforts are needed to ensure long-term funding of bird observatories, at least 6 of which have been established in Brazil since 2014 (Figueira 2021). Bird observatories contribute to knowledge of habitat relationships and population trends, train students and wildlife professionals, and help grow local conservation organizations (Latta et al. 2005, Latta and Faaborg 2008). Urgently, Neotropical institutions must develop their own criteria for evaluating research contributions and reduce their reliance on journal impact factors (and similar metrics), which increasingly reflect foreign priorities and markets.

Research Groups

Whether we are located in the Global South or North, individuals and research groups can adopt explicitly anti-colonial,

TABLE 5. Recommended actions to support the advancement of Neotropical ornithology, based on consensus among our 124 authors

Goal	Proposed change
Promote meaningful collaborations through new models of governance	1. Institutions explicitly acknowledge the colonial legacy of ornithology in the Neotropics, including the historical exclusivity of field stations and expeditions embedded in systems of hierarchy and segregation (Raby 2017a, 2017b). 2. Journals and funding agencies add requirements for researchers to reflect on how they promoted/will promote equity and inclusion of local ornithologists in research leadership (e.g., through structured reflexivity statements; Morton et al. 2022). Funding agencies and institutions incentivize collective/shared leadership of research programs as a core principle of academic recognition (Eichhorn et al. 2020). 3. Neotropical institutions develop local evaluation methods (for scholarships, graduate programs, promotion, awards) that better reflect regional needs, reduce the use of academic metrics (e.g., journal impact factors), and include local impact evaluation (Rau et al. 2018, CLACSO 2020). 4. Governments and institutions promote, sustain, and support ornithological societies in Neotropical countries in which there are none yet. Consortia of ornithological societies in the Neotropics can foster regional collaboration, deliberate research and publication priorities (e.g., priority-setting sessions of BirdsCaribbean), and promote shared visions and assumptions to effectively communicate regional bird research ideas to non-Neotropical institutions. 5. Organizations fund and researchers develop systems for career-long, multi-dimensional mentorship networks (Davies et al. 2021), virtual meetings, and guest visits among labs in different countries. South-South links are an important priority, to learn from and influence ideas across the Neotropics, Africa, and Asia (Cusicanqui 2012).
Promote diversity through justice, equity, and inclusion	6. Organizations eliminate all forms of racism in ornithology (see Schell et al. 2020, Ali et al. 2021, and Gosztyla et al. 2021, for actionable plans) and develop strategies to promote the careers of Neotropical ornithologists across the spectrum of gender identities (Tulloch 2020). 7. Organizations address implicit bias and access considerations across all aspects of ornithology, including leadership of professional societies, editorial invitations, plenary and keynote speakers, and awards. Organizations rewrite awards criteria to include Neotropical researchers, eliminate exclusionary requirements (such as paid society membership), and prioritize research on little-known study systems or regions. 8. Organizations reduce financial and language barriers to Latin American and Caribbean researchers (e.g., eliminate article processing fees, hold bilingual meetings, promote multilingual publication through machine translation; Steigerwald et al. 2022). 9. Journals add steps in the submission and review process to remind authors to cite work in languages other than English, and remind reviewers that frameworks and examples from the Global North are not always appropriate or needed for studies from the Global South.
Strengthen funding and professional development	10. Organizations increase professional-track programs for ornithologists in training in the Neotropics, and provide funding and opportunities to maintain these ornithologists working in the field after completion of graduate studies. 11. Institutions specifically channel funding to marginalized groups. For example, the Graduate Course in Ecology at University of São Paulo (USP, Brazil) opened a special call for students from social and ethnic groups that are disproportionately excluded. Funding agencies should also redirect funding toward the topics of interest to marginalized groups (e.g., Hoppe et al. 2019). 12. Organizations support visits of ornithologists from the Neotropics to museum collections in the Neotropics and in the Global North. A good example is the Frank M. Chapman Memorial Fund from the American Museum of Natural History: https://www.amnh.org/research/vertebrate-zoology/ornithology/grants 13. Donors directly support small, independent organizations based in the Neotropics. 14. Ornithologists in the Neotropics provide professional and research mentorship to undergraduate and graduate students in the North, and vice-versa (McGill et al. 2021). Some examples are the "women and non-binary people of color in Ecology, Evolutionary Biology, and allied fields" https://wocineeb.wordpress.com/woc-in-eeb-networking, the EEB Mentor Match https://eebmentormatch.com, and Científico Latino https://www.cientificolatino.com 15. Researchers coordinate efforts to increase funding to locally-led projects. For example, we can better coordinate research efforts on long-distance migratory birds, such as aerial insectivores, to leverage local research on residents and austral migrants that are currently understudied (Faaborg et al. 2010, Jahn et al. 2020).

collaborative, and inclusive approaches to ornithology, as a matter of honor and research ethics. The idea of individual excellence, competition for power, and top-down leadership by a single charismatic leader (usually white, cisgender male) is deeply ingrained in our western value system (Davis 2016) and is a pervasive expression of coloniality in academia (Pérez 2022); we can question and reject this paradigm (Davies et al. 2021). We can encourage, instead, a culture of consensus, democracy, and power-sharing in our labs and projects. Researchers from the Global North can get to know the work of ornithologists in the Neotropics, value their knowledge, and visit their museums and other collections (e.g., Areta and Juhant 2019). We can engender authentic collaborations by applying our curiosity to understand everyone's perspective

on a topic, rather than jumping to preconceived ideas about objectives.

We do not aim for all research projects to be fully local, nor do we argue that foreign researchers stop proposing any of their own ideas; we simply suggest a better balance. To achieve this balance, collaborations can follow the excellent guidelines and examples of de Vos (2022), Ramírez-Castañeda et al. (2022), Singeo and Ferguson (2022) and Yua et al. (2022). Researchers can seek to join and build equitable networks for cooperation across the Americas and insist that hemispheric conservation efforts include the many declining species that spend their entire life cycle within the Neotropics. Promising examples of research networks include the Western Hemisphere Shorebird Reserve Network (http://whsrn.org), Censo Internacional de Aves Acuáticas (Wetlands International), Colombia Resurvey Project (Gomez et al. 2022), Aves Internacionales Network project (Cueto et al. 2015, https://avesinternacionales.wordpress.com), and joint meetings, such as the Ornithological Congress of the Americas.

A STARTING PLACE

We began writing this article to channel a collective sense of exasperation with review papers that ignored the knowledge and work of ornithologists based in the Neotropics. Regardless of our origins, most of the authors were trained in a positivist epistemology, immersed in a colonial culture that assumes the North leads and the South follows (Monge-Nájera 2002). However, in the words of Simón Rodríguez (1769–1854):

> *La América no debe imitar servilmente, sino ser original. La sabiduría de la Europa y la prosperidad de los Estados Unidos son, en América, dos enemigos de la libertad de pensar* [The Americas must not slavishly imitate, but be original. The wisdom of Europe and the prosperity of the United States are, in the Americas, two enemies of freedom of thought].

In questioning perspectives of Neotropical ornithology, we had to step outside of our research about birds and turn the lens on our own colonial histories and life experience as ornithologists [as modeled 30 years ago by Naranjo et al. (1992), in a symposium on migratory birds].

We present ideas from a few of the people studying birds in the Neotropics, but there is no easy recipe by which ornithologists can eliminate all of the injustices that arise from centuries of colonialism and ongoing coloniality in science. Our role as ornithologists is not to solve every problem raised in this paper, but to learn to recognize coloniality in ornithology, and to humbly apply our skills and resources in the service of collective processes of decolonization (Pérez 2022). We urge editors and authors to ensure that future reviews of Neotropical ornithology include perspectives from more people living and working in the Neotropics (Armenteras 2021), and thorough and comprehensive reviews of regional literature. Many of us have benefited and continue to benefit from graduate training, positions, and collaborations housed at northern institutions; we have beloved friends and respected colleagues and mentors among researchers in the Global North, including the authors of Lees et al. (2020). We invite these friends and colleagues to join us on the path described so beautifully by Pérez and Radi (2019:982):

> *...look... past well-known sources, learn... about alien contexts, share... the burden of translation that scholars from the South have carried on their shoulders for centuries, and develop... ethical frameworks for non-exploitative relationships with peers from marginalized contexts...*

In making these efforts, we ornithologists will join a community of researchers, across academia, working to build new paradigms of knowledge construction that can transform our understanding of the world.

Supplementary material

Supplementary material is available at *Ornithological Applications* online. Supplements also include versions of this manuscript translated into Spanish and Portuguese.

Acknowledgments

We dedicate this article to those who came before us and gave us their shoulders to stand on, to the friends and colleagues no longer with us, and to the future generations who will continue the work when we are gone. For discussions or comments on earlier drafts of the manuscript, we are grateful to Ana González-Prieto, Eduardo E. Iñigo-Elías, Luiza Figueira, Pedro Blendinger, Joseph Wunderle, Diego Méndez, Harold Greeney, Miguel Lentino, Paolo Piedrahita, Jaime Chaves, David Riaño, Adrián Azpiroz, Kaspar Delhey, María Soledad Liébana, José Luis Alcántara Carbajal, and Steve Beissinger. We thank peer reviewers and the journal's Editor-in-Chief, Catherine Lindell, for input.

Funding statement

We did not receive specific funding for this project, but we thank many funding sources for supporting our work over the years.

Author contributions

All authors conceived, discussed, and contributed to the content of the paper (lived experiences, ideas, literature, and edits). KLC, ERI, LS, CIM, JTI, SZ, EB, JCR-O, and FM-C organized the contributions, wrote, and substantially edited the drafts. The Spanish and Portuguese translations were conducted using DeepL Translator (www.deepl.com/translator) and were proofread and edited by EB, JTI, CCR, FHA-S and KLC.

LITERATURE CITED

Adame, F. (2021). Meaningful collaborations can end "helicopter research". *Nature*. (https://www.nature.com/articles/d41586-021-01795-1)

Ahern-Dodson, J., C. R. Clark, T. Mourad, and J. A. Reynolds (2020). Beyond the numbers: Understanding how a diversity mentoring program welcomes students into a scientific community. *Ecosphere* 11:e03025.

Aleixo, A., and J. M. E. Vielliard (1995). Composição e dinâmica da avifauna da Mata de Santa Ginebra, Campinas, São Paulo, Brasil. *Revista Brasileira de Zoologia* 12:493–511.

Ali, H., S. L. Sheffield, J. E. Bauer, R. P. Caballero-Gill, N. M. Gasparini, J. Libarkin, K. K. Gonzales, J. Willenbring, E. Amir-Lin, J. Cisneros,

et al. (2021). An actionable anti-racism plan for geoscience organizations. *Nature Communications* 12:3794.

Alperin, J. P. (2022). Article-processing charges weaken open access. *Nature* 610:233.

Altamirano, T. A., J. T. Ibarra, K. Martin, and C. Bonacic (2017). The conservation value of tree decay processes as a key driver structuring tree cavity nest webs in South American temperate rainforests. *Biodiversity and Conservation* 26:2453–2472.

Altamirano Gómez Ortega, M. A., and J. Guzmán Hernández (2009). La Colección Zoológica Regional (Aves) del Instituto de Historia Natural de Chiapas, México. *Huitzil* 1:7–14.

Alves, M. A. S., J. M. C. da Silva, and E. S. Costa (2008). Brazilian ornithology: History and current trends. *Ornitología Neotropical* 19:S391–S399.

Amano, T., V. Berdejo-Espinola, A. P. Christie, K. Willott, M. Akasaka, A. Báldi, M. Chen, C. -Y. Choi, M. B. D. Karrhat, L. G. de Oliveira, *et al*. (2021). Tapping into non-English-language science for the conservation of global biodiversity. *PLoS Biology* 19:e3001296.

Ancona, S., S. Sánchez-Colón, M. C. Rodríguez, and H. Drummond (2011). El Niño in the Warm Tropics: Local sea temperature predicts breeding parameters and growth of Blue-footed Boobies. *Journal of Animal Ecology* 80:799–808.

Ancona, S., H. Drummond, C. Rodríguez, and J. J. Zúñiga-Vega (2018). Experiencing El Niño conditions during early life reduces recruiting probabilities but not adult survival. *Royal Society Open Science* 5:170076.

Anderson, C. B., A. Monjeau, and J. R. Rau (2015). Knowledge dialogue to attain global scientific excellence and broader social relevance. *BioScience* 65:709–717.

Anderson, D. W., C. R. Godínez-Reyes, E. Velarde, R. Avalos-Tellez, D. Ramírez-Delgado, H. Moreno-Prado, T. Bowen, F. Gress, J. Ventura-Trejo, L. Adrean, *et al*. (2017). Pelícano Pardo, *Pelecanus occidentalis californicus* (Aves: Pelecanidae): Cinco décadas con ENOS, anidación dinámica y estatus contemporáneo de reproducción en el Golfo de California. *Ciencias Marinas* 43:1–34.

Angulo, E., C. Diagne, L. Ballesteros-Mejia, T. Adamjy, D. A. Ahmed, E. Akulov, A. K. Banerjee, C. Capinha, C. A. K. M. Dia, G. Dobigny, *et al*. (2021). Non-English languages enrich scientific knowledge: The example of economic costs of biological invasions. *Science of the Total Environment* 775:144441.

Arcos-Torres, A., and A. Solano-Ugalde (2007). First description of the nest, nest site, eggs and nestlings of Nariño Tapaculo (*Scytalopus vicinior*). *Ornitología Neotropical* 18:445–448.

Arenas-Mosquera, D. (2011). Aspectos de la biología reproductiva del Periquito Aliamarillo (*Pyrrhura calliptera*) en los bosques altoandinos de La Calera, Colombia. *Conservación Colombiana* 14:58–70.

Areta, J. I., and K. L. Cockle (2012). A theoretical framework for understanding the ecology and conservation of bamboo-specialist birds. *Journal of Ornithology* 153:163–170.

Areta, J. I., and M. A. Juhant (2019). The Rufous-thighed Kite *Harpagus diodon* is not an endemic breeder of the Atlantic Forest: Lessons to assess Wallacean shortfalls. *Ibis* 161:337–345.

Armenteras, D. (2021). Guidelines for healthy global scientific collaborations. *Nature Ecology & Evolution* 5:1193–1194.

Asai, D. J. (2020). Race matters. *Cell* 181:754–757.

Asase, A., T. I. Mzumara-Gawa, J. O. Owino, A. T. Peterson, and E. Saupe (2022). Replacing "parachute science" with "global science" in ecology and conservation biology. *Conservation Science and Practice* 4:e517.

Astudillo, P. X., I. Grass, D. C. Siddons, D. G. Schabo, and N. Farwig (2020). Centrality in species-habitat networks reveals the importance of habitat quality for high-Andean birds in *Polylepis* woodlands. *Ardeola* 67:307–324.

Avalos, V. R., and F. Saavedra (2016). Parental behaviour in Versicoloured Barbet *Eubucco versicolor* in Bolivia. *Cotinga* 38:101–103.

Balderrama, J. A., M. Crespo S, R. Vargas-Rodriguez, and L. F. Aguirre (2008). Descripción del nido, huevos y polluelos de *Caprimulgus longirostris atripunctatus* en el Parque Nacional Tunari, Cochabamba, Bolivia. *Kempffiana* 4:3–7.

Barbosa, L. G., M. A. S. Alves, and C. E. V. Grelle (2021). Actions against sustainability: Dismantling of the environmental policies in Brazil. *Land Use Policy* 104:105384.

Barnes, E. (2009). The nest and eggs of Ash-breasted Tit-Tyrant *Anairetes alpinus* in southern Peru. *Cotinga* 31:138–139.

Barreau, A., J. T. Ibarra, F. S. Wyndham, A. Rojas, and R. A. Kozak (2016). How can we teach our children if we cannot access the forest? Generational change in Mapuche knowledge of wild edible plants in Andean temperate ecosystems of Chile. *Journal of Ethnobiology* 36:412–432.

Bauer, R. (2018). The crucible of the tropics: Alexander von Humboldt's hermeneutics of discovery. *The Eighteenth Century* 59:237–255.

Beehler, B. M. (2010). The forgotten science: A role for natural history in the twenty-first century? *Journal of Field Ornithology* 81:1–4.

Beel, J., and B. Gipp (2009). *Google Scholar's ranking algorithm: an introductory overview*. Proceedings of the 12th International Conference on Scientometrics (ISSI'09), Rio de Janeiro, Brazil.

Bekerman, F. (2009). El campo científico argentino en los años de plomo: desplazamientos y reorientación de los recursos. *Sociohistórica/Cuadernos del CISH* 26:151–176.

Belton, W. (1985). Birds of Rio Grande do Sul, Brazil. Part 2. Formicariidae through Corvidae. *Bulletin of the American Museum of Natural History* 180:1–242.

Berlin, B. (1981). The pervasiveness of onomatopoeia in Aguaruna and Huambisa bird names. *Journal of Ethnobiology* 2:238–261.

Bernis, F., E. de Juana, J. del Hoyo, X. Ferrer, M. Fernández Cruz, R. Sáez-Royuela, and J. Sargatal (1994). Nombres en castellano de las aves del mundo recomendados por la Sociedad Española de Ornitología. *Ardeola* 41:79–89.

Bobato, R. (2016). *Biologia reprodutiva e comparativa de Chiroxiphia caudata na Floresta Atlântica Subtropical*. Master's thesis, Universidade Federal do Paraná, Curitiba, Brazil.

Bodrati, A., and F. G. Di Sallo (2016). Primera descripción del nido, huevos, y comportamiento de incubación del Chululú Chico (*Hylopezus nattereri*) en la selva Atlántica de Argentina. *Ornitología Neotropical* 27:197–201.

Bodrati, A., K. L. Cockle, F. G. Di Sallo, C. Ferreyra, S. A. Salvador, and M. Lammertink (2015). Nesting and social roosting of the Ochre-collared Piculet (*Picumnus temminckii*) and White-barred Piculet (*Picumnus cirratus*), and implications for the evolution of woodpecker (Picidae) breeding biology. *Ornitología Neotropical* 26:223–244.

Bonaccorso, E. (2009). Historical biogeography and speciation in the Neotropical highlands: molecular phylogenetics of the jay genus *Cyanolyca*. *Molecular Phylogenetics and Evolution* 50:618–632.

Bonier, F., P. R. Martin, and I. T. Moore (2008). First description of the nest and young of the Agile Tit-Tyrant (*Uromyias agilis*). *Ornitología Neotropical* 19:117–122.

Borges, S. H., F. Baccaro, M. Moreira, and L. E. Choueri (2019). Bird assemblages on Amazonian river islands: Patterns of species diversity and composition. *Biotropica* 51:1–10.

Boshoff, N. (2009). Neo-colonialism and research collaboration in Central Africa. *Scientometrics* 81:413–434.

Botero-Delgadillo, E., V. Quirici, Y. Poblete, S. Ippi, B. Kempenaers, and R. A. Vásquez (2020). Extrapair paternity in two populations of the socially monogamous Thorn-tailed Rayadito *Aphrastura spinicauda* (Passeriformes: Furnariidae). *Ecology and Evolution* 10:11861–11868.

Bottan, N., B. Hoffmann, and D. Vera-Cossio (2020). The unequal impact of the coronavirus pandemic: Evidence from seventeen developing countries. *PLoS One* 15:e0239797.

British Council. (2015). *O ensino de inglês na educação pública brasileira*. British Council Brasil, São Paulo, Brazil.

Brodt, M. S. C., F. Della-Flora, and N. Cáceres (2014). Non-linear ascension in a reproductive hierarchy of the Blue Manakin (*Chiroxiphia caudata*). *Acta Ethologica* 17:181–185.

Buainain, N., M. F. A. Maximiano, M. Ferreira, A. Aleixo, B. C. Faircloth, R. T. Brumfield, J. Cracraft, and C. C. Ribas (2021).

Multiple species and deep genomic divergences despite little phenotypic differentiation in an ancient Neotropical songbird, *Tunchiornis ochraceiceps* (Sclater, 1860) (Aves: Vireonidae). *Molecular Phylogenetics and Evolution* 162:107206.

Bugoni, L. (2020). From *Ararajuba* to *Ornithology Research*: an historical overview of bird journals published by the Brazilian Ornithological Society. *Ornithology Research* 28:1–3.

Buitrón-Jurado, G., J. M. Galarza, and D. Guarderas (2011). First description of nests and eggs of Chestnut-headed Crake (*Anurolimnas castaneiceps*) from Ecuador. *The Wilson Journal of Ornithology* 123:142–145.

Buxton, R. T., E. A. Nyboer, K. E. Pigeon, G. D. Raby, T. Rytwinski, A. J. Gallagher, R. Schuster, H. -Y. Lin, L. Fahrig, J. R. Bennett, *et al.* (2021). Avoiding wasted research resources in conservation science. *Conservation Science and Practice* 3:e329.

Cabrera, M., and I. Saraiva (2022). Principales problemáticas de las publicaciones científicas: un análisis en perspectiva latinoamericana. *e-Ciencias de la Información* 12:1–20.

Campos-Arceiz, A., R. B. Primack, A. J. Miller-Rushing, and M. Maron (2018). Striking underrepresentation of biodiversity-rich regions among editors of conservation journals. *Biological Conservation* 220:330–333.

Cantú, J. C., E. García de la Puente, G. M. González, and M. E. Sánchez (2020) *Riqueza Alada: El Crecimiento del Aviturismo en México*. Defenders of Wildlife, UABCS, ENESUM, Teyeliz, A.C.

Care, O., M. J. Bernstein, M. Chapman, I. Diaz Reviriego, G. Dressler, M. R. Felipe-Lucia, C. Friis, S. Graham, H. Hänke, L. J. Haider, *et al.* (2021). Creating leadership collectives for sustainability transformations. *Sustainability Science* 16:703–708.

Casanova, P. G. (1965). Internal colonialism and national development. *Studies in Comparative International Development* 1:27–37.

Castro Torres, A. F., and D. Alburez-Gutierrez (2022). North and South: naming practices and the hidden dimension of global disparities in knowledge production. *Proceedings of the National Academy of Sciences USA* 119:e2119373119.

Cebolla Badie, M. (2000). El conocimiento Mbya-Guaraní de las aves: nomenclatura y clasificación. *Novedades de Antropología* 36:9–188.

Cebolla Badie, M. (2013). Cosmología y naturaleza Mbya-Guaraní. Ph.D. thesis, Universitat de Barcelona, Barcelona, Spain.

Chachugi, R. (2013). Las aves y el conocimiento tradicional Aché. *Ache kwatygi kwyra wywy–djiwã*. Fundación Moisés Bertoni, Fundación Global Nature y Comunidad Aché de Arroyo Bandera, Asunción, Paraguay.

Chaparro-Herrera, S., P. Montoya, and O. Barreto Borges (2015). Primera descripción del nido y huevos del Semillero Paramuno (*Catamenia homochroa*). *Ornitología Neotropical* 26:295–298.

Chazarreta, L., V. Ojeda, and M. Lammertink (2012). Morphological and foraging behavioral differences between sexes of the Magellanic Woodpecker (*Campephilus magellanicus*). *Ornitología Neotropical* 23:529–544.

Cisneros, J. C., N. B. Raja, A. M. Ghilardi, E. M. Dunne, F. L. Pinheiro, O. R. Regalado Fernández, M. A. F. Sales, R. A. Rodríguez-de la Rosa, A. Y. Miranda-Martínez, S. González-Mora, *et al.* (2022). Digging deeper into colonial palaeontological practices in modern day Mexico and Brazil. *Royal Society Open Science* 9:210898.

CLACSO - Consejo Latinoamericano de Ciencias Sociales. (2020). *Evaluando la evaluación de la producción científica. Serie: Para una transformación de la evaluación de la ciencia en América Latina y el Caribe del Foro Latinoamericano sobre Evaluación Científica (FOLEC)*. 2da. Edición. CLACSO, Buenos Aires, Argentina. www.clacso.org/folec/clacso-ante-la-evaluacion

Cobos, V., and R. Miatello (2001). Descripción del nido, huevo y pichón de la Monjita Salinera (*Neoxolmis salinarum*). *El Hornero* 16:47–48.

Cockle, K. L., and A. Bodrati (2017). Divergence in nest placement and parental care of Neotropical foliage-gleaners and treehunters (Furnariidae: Philydorini). *Journal of Field Ornithology* 88:336–348.

Cockle, K., C. Maders, G. Di Santo, and A. Bodrati (2008). The Black-capped Piprites *Piprites pileata* builds a spherical moss nest. *Cotinga* 29:166–168.

Cockle, K. L., K. Martin, and T. Wesołowski (2011). Woodpeckers, decay, and the future of cavity-nesting vertebrate communities worldwide. *Frontiers in Ecology and the Environment* 9:377–382.

Cohn-Haft, M., A. Whittaker, and P. C. Stouffer (1997). A new look at the "species-poor" Central Amazon: The avifauna north of Manaus, Brazil. *Ornithological Monographs* 48:205–235.

Copello, S., and F. Quintana (2009). Spatio-temporal overlap between the at-sea distribution of Southern Giant Petrels and fisheries at the Patagonian Shelf. *Polar Biology* 32:1211–1220.

Córdoba-Córdoba, S., M. Echeverry-Galvis, S. Chaparro-Herrera, and N. Morales-G (2012). Description of the nest and eggs of the Bearded Mountaineer Hummingbird (*Oroenympha nobilis*) from Peru. *Ornitología Neotropical* 23:299–302.

Cornelius, C., K. Cockle, N. Politi, I. Berkunsky, L. Sandoval, V. Ojeda, L. Rivera, M. Hunter Jr., and K. Martin (2008). Cavity-nesting birds in Neotropical forests: cavities as a potentially limiting resource. *Ornitología Neotropical* 19:S253–S268.

Costa, L. M. (2011). *História de vida de Asthenes luizae: biologia reprodutiva, sucesso reprodutivo e o impacto de Molothrus bonariensis em uma ave ameaçada e endêmica dos campos rupestres da Cadeia do Espinhaço*. Master's thesis, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil.

Costa, L. M. (2015). *História natural, demografia, viabilidade populacional e conservação de Asthenes luizae (Furnariidae), ave endêmica dos campos rupestres da Cadeia do Espinhaço, Minas Gerais*. Ph.D. thesis, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil.

Cuarón, A. D. (1997). Miguel Alvarez del Toro: First and last of a kind. *Conservation Biology* 11:566–568.

Cueto, V. R., J. Lopez de Casenave, and L. Marone (2008). Neotropical austral migrant land birds: population trends and habitat use in the central Monte Desert, Argentina. *Condor* 110:70–79.

Cueto, V., A. E. Jahn, D. T. Tuero, A. C. Guaraldo, J. H. Sarasola, S. P. Bravo, V. Gómez, J. I. Giraldo, D. Masson, M. MacPherson, *et al.* (2015). Las aves migratorias de América del Sur. Nuevas técnicas revelan información sobre su comportamiento. *Ciencia Hoy* 142:19–25.

Cusicanqui, S. R. (2012). Ch'ixinakax utxiwa: A reflection on the practices and discourses of decolonization. *South Atlantic Quarterly* 1:95–109.

Dabbene, R. (1918). Nidos y huevos de vencejos de Argentina. *El Hornero* 1:193.

Dada, S., K. R. van Daalen, A. Barrios-Ruiz, K. -T. Wu, A. Desjardins, M. Bryce-Alberti, A. Castro-Varela, P. Khorsand, A. Santamarta Zamorano, L. Jung, *et al.* (2022). Challenging the "old boys club" in academia: Gender and geographic representation in editorial boards of journals publishing in environmental sciences and public health. *PLoS Global Public Health* 2:e0000541.

Dahdouh-Guebas, F., J. Ahimbisibwe, R. V. Moll, and N. Koedam (2003). Neo-colonial science by the most industrialised upon the least developed countries in peer-reviewed publishing. *Scientometrics* 56:329–343.

Daily, G. C., P. R. Ehrlich, and N. M. Haddad (1993). Double keystone bird in a keystone species complex. *Proceedings of the National Academy of Sciences USA* 90:592–594.

da Silva, M., M. Pichorim, and M. Z. Cardoso (2008). Nest and egg description of threatened *Herpsilochmus* spp. from coastal forest habitats in Rio Grande do Norte, Brazil (Aves: Thamnophilidae). *Revista Brasileira de Zoologia* 25:570–572.

Dávalos, L. M., R. M. Austin, M. A. Balisi, R. L. Begay, C. A. Hofman, M. E. Kemp, J. R. Lund, C. Monroe, A. M. Mychajliw, E. A. Nelson, *et al.* (2020). Pandemics' historical role in creating inequality. *Science* 368:1322–1323.

David, S. (2011). El nido y los huevos del Verderón Piquinegro (*Cyclarhis nigrirostris*). *Ornitología Colombiana* 11:87–90.

Davies, S. W., H. M. Putnam, T. Ainsworth, J. K. Baum, C. B. Bove, S. C. Crosby, I. M. Côté, A. Duplouy, R. W. Fulweiler, A. J. Griffin, *et al.* (2021). Promoting inclusive metrics of success and impact to dismantle a discriminatory reward system in science. *PLoS Biology* 19:e3001282.

Davis, A. Y. (2016). *Freedom is a Constant Struggle: Ferguson, Palestine, and the Foundations of a Movement*. Haymarket Books, Chicago, IL, USA.

De Gracia, N. (2021). Decolonizing conservation science: Response to Jucker *et al*. 2018. *Conservation Biology* 35:1321–1323.

Devenish-Nelson, E. S., D. E. Weidemann, J. M. Townsend, and H. P. Nelson (2017). The role of a regional journal as a depository for valuable ornithological data as demonstrated by Caribbean forest endemic birds. *Journal of Caribbean Ornithology* 30:75–87.

Díaz, S., J. Settele, E. Brondízio, H. T. Ngo, M. Guèze, J. Agard, A. Arneth, P. Balvanera, K. Brauman, S. Butchart, K. Chan, *et al*. (2019). Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services - Advance unedited version - 6 May 2019. IPBES.

Di Bitetti, M. S., and J. A. Ferreras (2017). Publish (in English) or perish: The effect on citation rate of using languages other than English in scientific publications. *Ambio* 46:121–127.

Di Giacomo, A. G. (2005). Aves de la Reserva El Bagual. In Historia natural y paisaje de la Reserva El Bagual, Provincia de Formosa, Argentina. Inventario de la fauna de vertebrados y de la flora vascular de un área protegida del Chaco Húmedo (A. G. Di Giacomo and S. F. Krapovickas, Editors). *Temas de Naturaleza y Conservación 4*. Aves Argentinas/ Asociación Ornitológica del Plata, Buenos Aires, Argentina.

Di Giacomo, A. S., and A. G. Di Giacomo (2008). Una breve historia de la ornitología en la Argentina. *Ornitología Neotropical* 19:S401–S414.

dos Anjos, L. (1998). Conseqüências biológicas da fragmentação no norte do Paraná. *Série Técnica IPEF* 12:87–94.

dos Anjos, L., G. Menezes Bochio, H. R. Medeiros, B. de Arruda Almeida, B. R. Arakaki Lindsey, L. C. Calsavara, M. C. Ribeiro, and J. M. Domingues Torezan (2019). Insights on the functional composition of specialist and generalist birds throughout continuous and fragmented forests. *Ecology and Evolution* 9:6318–6328.

Doucet, S. M., and D. J. Mennill (2005). First description of the nest of the Round-tailed Manakin (*Pipra chloromeros*). *Ornitología Neotropical* 16:433–434.

Drummond, H., E. González, and J. L. Osorno (1986). Parent-offspring cooperation in the Blue-footed Booby (*Sula nebouxii*). *Behavioral Ecology and Sociobiology* 19:365–372.

Ducatez, S., and L. Lefebvre (2014). Patterns of research effort in birds. *PLoS One* 9:e89955.

Duffy, D. C. (1988). Ornithology in Central and South America: Cause for optimism? *The Auk* 105:395–396.

Dvorak, M., E. Nemeth, B. Wendelin, P. Herrera, D. Mosquera, D. Anchundia, C. Sevilla, S. Tebbich, and F. Fessl (2017). Conservation status of landbirds on Floreana: the smallest inhabitat Galapagos island. *Journal of Field Ornithology* 88:132–145.

Eichhorn, M. P., K. Baker, and M. Griffiths (2020). Steps towards decolonising biogeography. *Frontiers of Biogeography* 12:e44795.

Espin, J., S. Palmas, F. Carrasco-Rueda, K. Riemer, P. E. Allen, N. Berkebile, K. A. Hecht, K. Kastner-Wilcox, M. N. Núñez-Regueiro, C. Prince, *et al*. (2017). A persistent lack of international representation on editorial boards in environmental biology. *PLoS Biology* 15:e2002760.

Estades, C. F. (2002). El sesgo geográfico en la teoría ornitológica y la necesidad de desarrollar la ornitología en Chile. *Boletín Chileno de Ornitología* 9:1.

Estades, C. F., and S. A. Temple (1999). Temperate-forest bird communities in a fragmented landscape dominated by exotic pine plantations. *Ecological Applications* 9:573–585.

European Commission. (2006). *Europeans and their languages*. Special Eurobarometer 243/ Wave 64.3 - TNS Opinion & Social.

Faaborg, J., R. T. Holmes, A. D. Anders, K. L. Bildstein, K. M. Dugger, S. A. Gauthreaux, P. Heglund, K. A. Hobson, A. E. Jahn, D. H. Johnson, *et al*. (2010). Conserving migratory land birds in the New World: Do we know enough? *Ecological Applications* 20:398–418.

Faria, L. C. P., L. A. Carrara, and M. Rodrigues (2008). Biologia reprodutiva do Fura-barreira *Hylocryptus rectirostris* (Aves: Furnariidae). *Revista Brasileira de Zoologia* 25:172–181.

Fernández Balboa, C. (2016). Roberto Straneck, el hombre de los sonidos. In *Aves Argentinas: 100 Años* (Aves Argentinas, Editor). Aves Argentinas/AOP, Buenos Aires, Argentina.

Ferretti, V. (2019). Understanding variation in extra-pair paternity in birds: A focus on Neotropical birds. In *Behavioral Ecology of Neotropical Birds* (J. C. Reboreda, V. D. Fiorini, and D. T. Tuero, Editors). Springer, Cham, Switzerland.

Fierro-Calderón, K., M. Loaiza-Muñoz, M. A. Sánchez-Martínez, D. Ocampo, S. David, H. F. Greeney, and G. A. Londoño (2021). Methods for collecting data about the breeding biology of Neotropical birds. *Journal of Field Ornithology* 93:315–341.

Figueira, L. (2021). *O que são observatórios de aves? Livro de Resumos*, XXVII Congresso Brasileiro de Ornitologia, online, 1–5 August 2021.

Fontana, C. S., T. W. da Silva, and J. P. de Souza (2017). Brazilian bird collections: A decade after Aleixo & Straube (2007). *Revista Brasileira de Ornitologia* 25:254–268.

Fontúrbel, F. E. and J. Vizentin-Bugoni (2021). A paywall coming down, another being erected: Open Access Article Processing Charges (APC) may prevent some researchers from publishing in leading journals. *The Bulletin of the Ecological Society of America* 102:e01791.

Fraga, R. M. (2019). A la memoria de Sergio Salvador (16-12-1955/ 2-9-2018). *El Hornero* 1:38.

França, L. F., and M. Â. Marini (2009). Low and variable reproductive success of a Neotropical flycatcher (*Suiriri islerorum*). *Emu* 109:265–269.

França, L. F., and M. Â. Marini (2010). Negative trend in population size in a Neotropical Flycatcher (*Suiriri islerorum*) despite high apparent annual survival. *Journal of Field Ornithology* 81:227–236.

Franke, I. (2007). Historia de la ornitología peruana e importancia de las colecciones científicas de aves. *Revista Peruana de Biología* 1:159–164.

Freile, J. F. (2015). Nesting of the Scrub Tanager (*Tangara vitriolina*) in Andean Ecuador. *Ornitología Neotropical* 26:51–58.

Freile, J. F., and S. Córdoba (2008). Historia de la ornitología en la región Andina: el ejemplo de Colombia y Ecuador. *Ornitología Neotropical* 19:S381–S389.

Freile, J. F., J. M. Carrión, F. Prieto-Albuja, L. Suárez, and F. Ortiz-Crespo (2006). La ornitología en Ecuador: un análisis del estado actual del conocimiento y sugerencias para prioridades de investigación. *Ornitología Neotropical* 17:183–202.

Freile, J. F., H. F. Greeney, and E. Bonaccorso (2014). Current Neotropical ornithology: Research progress 1996–2011. *The Condor* 116:84–96.

Freitas, G. H. S., M. F. Vasconcelos, and M. Rodrigues (2009). Aspectos reprodutivos e comentários adicionais sobre o jovem do Rabo-mole-da-serra (*Embernagra longicauda*) na Serra do Cipó, Minas Gerais. *Atualidades Ornitológicas* 147:8–9.

García-Lau, I., M. Acosta, L. Mugica, A. Rodríguez-Ochoa, and A. González (2018). Revisión de los estudios científicos sobre ornitología urbana de La Habana, Cuba. *El Hornero* 33:29–44.

Gelis, R. A., H. F. Greeney, M. Cooper, and C. Dingle (2006). The nest, eggs, nestlings and fledglings of Fiery-throated Fruiteater *Pipreola chlorolepidota* in north-east Ecuador. *Cotinga* 26:10–12.

Gibbs, W. W. (1995). Lost science in the Third World. *Scientific American* 2:92–99.

Gibbs, J. P., M. L. Hunter Jr., and S. M. Melvin (1993). Snag availability and communities of cavity nesting birds in tropical versus temperate forests. *Biotropica* 25:236–241.

Gomez, C., C. D. Cadena, A. M. Cuervo, J. Díaz-Cárdenas, F. García-Cardona, N. Niño-Rodríguez, N. Ocampo-Peñuela, D. Ocampo, G. Seeholzer, A. Sierra-Ricaurte, *et al*. (2022). Reexpedición Colombia: Entender el pasado para empoderar acciones que fortalezcan el conocimiento y conservación de las aves. *Biota Colombiana* 23:e984.

González-García, F. (1994). Behavior of Horned Guan in Chiapas, Mexico. *The Wilson Bulletin* 106:357–365.
González-García, F. (1995). Reproductive biology and vocalizations of the Horned Guan *Oreophasis derbianus* in Mexico. *The Condor* 97:415–426.
Gordin, M. D. (2015). *Scientists' Babel: How Science Was Done Before and After Global English*. University of Chicago Press, Chicago, Illinois, USA.
Gorgulho, S., S. S. Jardim, and M. B. Mesquita (2005). *A vida e a obra de Johan Dalgas Frisch*. Dalgas Ecoltec, São Paulo, Brazil.
Gorton, G. (2010). Remembering Paul A. Schwartz (1917–1979) pioneer Neotropical bird recordist and taxonomist. *Birding*, September 2010:40–50.
Gosztyla, M. L., L. Kwong, N. A. Murray, C. E. Williams, N. Behnke, P. Curry, K. D. Corbett, K. N. DSouza, J. Gala de Pablo, J. Gicobi, *et al*. (2021). Responses to 10 common criticisms of anti-racism action in STEMM. *PLoS Computational Biology* 17:e1009141.
Greeney, H. F. (2006). The nest, eggs, and nestlings of the Rufous-headed Pygmy-Tyrant (*Pseudotriccus ruficeps*) in southeastern Ecuador. *Ornitología Neotropical* 17:589–592.
Greeney, H. F. (2012). The nest, egg, and nestling of the Stripe-headed Antpitta (*Grallaria andicolus*) in southern Peru. *Ornitología Neotropical* 23:367–374.
Greeney, H. F. (2013). The nest of the Ash-breasted Tit-Tyrant (*Anairetes alpinus*). *Ornitología Colombiana* 13:74–78.
Greeney, H. F., and A. Dyrcz (2011). Breeding biology of Pale-edged Flycatcher (*Myiarchus cephalotes*) in northeastern Ecuador. *Ornitología Colombiana* 11:49–57.
Greeney, H. F., and R. A. Gelis (2005). The nest and nestlings of the Long-tailed Tapaculo (*Scytalopus micropterus*) in Ecuador. *Ornitología Colombiana* 3:88–91.
Greeney, H. F., and R. A. Gelis (2007). Further breeding records from the Ecuadorian Amazonian lowlands. *Cotinga* 29:62–68.
Greeney, H. F., and J. D. Vargas-Jiménez (2017). First description of the nest and nestlings of the Thicket Antpitta (*Hylopezus dives*). *Ornitología Neotropical* 28:181–185.
Greeney, H. F., and K. Zyskowski (2008). A novel nest architecture within the Furnariidae: First nests of the White-browed Spinetail. *The Condor* 110:584–588.
Greeney, H. F., R. C. Dobbs, and R. A. Gelis (2005). The nest, eggs, nestlings, and parental care of the Bronze-olive Pygmy-Tyrant (*Pseudotriccus pelzelni*). *Ornitología Neotropical* 16:511–518.
Greeney, H. F., L. H. Jamieson, R. C. Dobbs, P. R. Martin, and R. A. Gelis (2006). Observations on the nest, eggs, and natural history of the Highland Motmot (*Momotus aequatorialis*) in eastern Ecuador. *Ornitología Neotropical* 17:151–154.
Greeney, H. F., J. L. Gonçalves de Lima, T. Tolêdo, and T. T. Silva (2016). First description of the nest of White-browed Antpitta *Hylopezus ochroleucus*. *Revista Brasileira de Ornitologia* 24:213–216.
Guillemin, M., and L. Gillam (2004). Ethics, reflexivity, and "ethically important moments" in research. *Qualitative Inquiry* 10:261–280.
Güller, R., H. Di Santo, and R. Lejarraga (2004). Nido de Cachirla Pálida (*Anthus hellmayri*) en la Reserva Natural Otamendi, Provincia de Buenos Aires, Argentina. *Nuestras Aves* 48:12.
Haelewaters, D., T. A. Hofmann, and A. L. Romero-Olivares (2021). Ten simple rules for Global North researchers to stop perpetuating helicopter research in the Global South. *PLoS Computational Biology* 17:e1009277.
Hahn, I. (2006). First reproductive records and nest sites of the endemic Juan Fernández Tit-Tyrant *Anairetes fernandezianus* (Philippi, 1857) (Aves: Passeriformes: Tyrannidae) from Robinson Crusoe Island, Chile. *Zoologische Abhandlungen (Dresden)* 55:177–190.
Haines, C. D., E. M. Rose, K. J. Odom, and K. E. Omland (2020). The role of diversity in science: A case study of women advancing female birdsong research. *Animal Behaviour* 168:19–24.
Hanauer, D. I., and K. Englander (2011). Quantifying the burden of writing research articles in a second language. *Written Communication* 28:403–416.
Hasui, E., J. P. Metzger, R. G. Pimentel, L. F. Silveira, A. A. A. Bovo, A. C. Martensen, A. Uezu, A. L. Regolin, A. Bispo de Oliveira, C. A. F. R. Gatto, *et al*. (2018). ATLANTIC BIRDS: A data set of bird species from the Brazilian Atlantic Forest. *Ecology* 99:497.
Hazlehurst, J., and G. Londoño (2012). Reproductive biology of the Yungas Manakin (*Chiroxiphia boliviana*) in Manu National Park, Peru. *Ornitología Neotropical* 23:597–601.
van der Hoek, Y., G. V. Gaona, M. Coach, and K. Martin (2020). Global relationships between tree-cavity excavators and forest bird richness. *Royal Society Open Science* 7:192177.
Hoffman, D., and M. Rodrigues (2011). Breeding biology and reproductive success of *Polystictus superciliaris* (Aves: Tyrannidae), an uncommon tyrant-flycatcher endemic to the highlands of eastern Brazil. *Zoologia* 28:305–311.
Hofstra, B., V. V. Kulkarni, S. M. Galvez, B. He, D. Jurafsky, and D. A. McFarland (2020). The diversity–innovation paradox in science. *Proceedings of the National Academy of Sciences USA* 117:9284–9291.
Hoppe, T. A., A. Litovitz, K. A. Willis, R. A. Meseroll, M. J. Perkins, B. I. Hutchins, A. F. Davis, M. S. Lauer, H. A. Valantine, J. M. Anderson, *et al*. (2019). Topic choice contributes to the lower rate of NIH awards to African-American/black scientists. *Science Advances* 5:eaaw7238.
Hortal, J., F. de Bello, J. A. F. Diniz-Filho, T. M. Lewinsohn, J. M. Lobo, and R. J. Ladle (2015). Seven shortfalls that beset large-scale knowledge of biodiversity. *Annual Review of Ecology, Evolution, and Systematics* 46:523–549.
Hughes, A. C., M. C. Orr, K. Ma, M. J. Costello, J. Waller, P. Provoost, Q. Yang, C. Zhu, and H. Qiao (2021). Sampling biases shape our view of the natural world. *Ecography* 44:1259–1269.
Hume, J. (2021). Storrs Lovejoy Olson (3 April 1944–20 January 2021). *Bulletin of the British Ornithologists' Club* 141:117–119.
Ibarra, J. T., and J. C. Pizarro (2016). Hacia una etno-ornitología interdisciplinaria, intercultural e intergeneracional para la conservación biocultural. *Revista Chilena de Ornitología* 22:1–6.
Ibarra, J. T., A. Barreau, and T. A. Altamirano (2013). Sobre plumas y folclore: presencia de las aves en refranes populares de Chile. *Boletín Chileno de Ornitología* 19:12–22.
Ibarra, J. T., A. Barreau, J. Caviedes, N. Pessa, J. Valenzuela, S. Navarro-Manquilef, C. Monterrubio-Solís, A. Ried, and J. C. Pizarro (2020a). Listening to elders: birds and forests as intergenerational links for nurturing biocultural memory in the southern Andes. In *Transnational Children and Youth: Experiences of Nature and Place, Culture and Care across the Americas* (V. Derr, and Y. Corona, Editors). Routledge, Abingdon, UK.
Ibarra, J. T., J. Caviedes, and P. Benavides (2020b). Winged voices: Mapuche ornithology from South American temperate forests. *Journal of Ethnobiology* 40:89–100.
Ippi, S., W. F. D. van Dongen, I. Lazzoni, C. I. Venegas, and R. A. Vásquez (2017). Shared territorial defence in the suboscine *Aphrastura spinicauda*. *Emu-Austral Ornithology* 117:97–102.
Jahn, A. E., V. R. Cueto, C. S. Fontana, A. C. Guaraldo, D. J. Levey, P. P. Marra, and T. Ryder (2020). Bird migration within the Neotropics. *The Auk: Ornithological Advances* 137:ukaa033.
Janzen, D. H. (1986). The future of tropical ecology. *Annual Review of Ecology and Systematics* 17:305–324.
Jiménez-Uzcátegui, G., W. Llerena, W. B. Milstead, E. E. Lomas, and D. A. Wiedenfeld (2011). Is the population of Floreana Mockingbird *Mimus trifasciatus* declining? *Cotinga* 33:34–40.
Jiménez-Uzcátegui, G., D. Wiedenfeld, C. A. Valle, F. H. Vargas, P. Piedrahita, L. J. Muñoz, and J. J. Álava (2019). Threats and vision for the conservation of Galápagos birds. *The Open Ornithology Journal* 12:1–15.
Johnson, O. (2017). Notes on the nesting behavior of the Gray-mantled Wren (*Odontorchilus branickii*). *Ornitología Neotropical* 28:175–179.
Junghans, M. E. (2009). Avis rara: A trajetória científica da naturalista alemã Emília Snethlage (1868–1929) no Brasil. Master's Dissertation (History of Science and Health), Fundação Oswaldo Cruz, Rio de Janeiro, Brazil.

Kamath, A., B. Velocci, A. Wesner, N. Chen, V. Formica, B. Subramaniam, and M. Rebolleda-Gómez (2022). Nature, data, and power: How hegemonies shaped this special section. The *American Naturalist* 200:81–88.

Khan, T., S. Abimbola, C. Kyobutungi, and M. Pai (2022). How we classify countries and people — and why it matters. *BMJ Global Health* 7:e009704.

Khelifa, R., and H. Mahdjoub (2022). Integrate geographic scales in equity, diversity and inclusion. *Nature Ecology & Evolution* 6:4–5.

Kingwell, C. J., and G. A. Londoño (2015). Description of the nest, eggs, and nestling of Rufous-bellied Bush-Tyrants (*Myiotheretes fuscorufus*). *The Wilson Journal of Ornithology* 127:92–97.

Kirwan, G. M. (2016). The nest of Serra do Mar Tyrant-Manakin *Neopelma chrysolophum* with a brief review of nest architecture in the genera *Neopelma* and *Tyranneutes*. *Bulletin of the British Ornithologists' Club* 136:293–295.

Konno, K., M. Akasaka, N. Osada, and R. Spake (2020). Ignoring non-English-language studies may bias ecological meta-analyses. *Ecology and Evolution* 10:6373–6384.

Kraus, M. W., B. Torrez, and H. LaStarr (2022). How narratives of racial progress create barriers to diversity, equity, and inclusion in organizations. *Current Opinion in Psychology* 43:108–113.

Kuhn, T. S. (1962). *The Structure of Scientific Revolutions*. University of Chicago Press, Chicago, IL, USA.

Landler, L., M. A. Jusino, J. Skelton, and J. R. Walters (2014). Global trends in woodpecker cavity entrance orientation: Latitudinal and continental effects suggest regional climate influence. *Acta Ornithologica* 49:257–266.

de la Peña, M. R. (2005). *Reproducción de las aves argentinas (con descripción de pichones)*. Literature of Latin America, Buenos Aires, Argentina.

de la Peña, M. R. (2019). Nidos, huevos, pichones y reproducción de aves argentinas. *Comunicaciones del Museo Provincial de Ciencias Naturales "Florentino Ameghino" (Nueva Serie)* Vol. 2., Santa Fe, Argentina.

Latta, S. C. (2012). Avian research in the Caribbean: past contributions and current priorities. *Journal of Field Ornithology* 83:107–121.

Latta, S. C., and J. Faaborg (2008). Migratory birds in the Caribbean: Benefits of studies of over-wintering birds for understanding resident bird ecology and promoting critical development of conservation capacity. *Conservation Biology* 23:286–293.

Latta, S. C., C. J. Ralph, and G. Geupel (2005). Strategies for the conservation monitoring of permanent resident landbirds and wintering Neotropical migrants in the Americas. *Ornitología Neotropical* 16:163–174.

Latta, S. C., B. A. Tinoco, P. A. Webster, and C. H. Graham (2011). Patterns and magnitude of temporal change in avian communities in the Ecuadorian Andes. *The Condor* 113:24–40.

Lebbin, D. J. (2007). Nesting behavior and nestling care of the Pavonine Quetzal (*Pharomachrus pavoninus*). *The Wilson Journal of Ornithology* 119:458–463.

Lebbin, D. J., P. A. Hosner, M. J. Andersen, U. Valdez, and W. P. Tori (2007). First description of nest and eggs of the White-lined Antbird (*Percnostola lophotes*), and breeding observations of poorly known birds inhabiting *Guadua* bamboo in southeastern Peru. *Boletín SAO* 17:119–132.

Lees, A. C., K. V. Rosenberg, V. Ruiz-Gutierrez, S. Marsden, T. S. Schulenberg, and A. D. Rodewald (2020). A roadmap to identifying and filling shortfalls in Neotropical ornithology. *The Auk: Ornithological Advances* 137:ukaa048.

Leite, L., and L. M. Diele-Viegas (2021). Juggling slow and fast science. *Nature Human Behaviour* 5:409.

Leite, G. A., M. M. Barreiros, I. P. Farias, and C. A. Peres (2016). Description of the nest of two Thamnophilidae species in the Brazilian Amazon. *Revista Brasileira de Ornitologia* 24:83–85.

Lentino, M. (2016). Migración de las aves en Rancho Grande: Resultados del programa de monitoreo de la migración de aves en el Parque Nacional Henri Pittier, 2015. *Revista Venezolana de Ornitología* 6:37–49.

Lentino, M., E. Bonaccorso, M. A. García, E. A. Fernández, R. Rivero, and C. Portas (2003). Longevity records of wild birds in the Henri Pittier National Park, Venezuela. *Ornitología Neotropical* 14:545–548.

Levidow, L. (1988). Non-western science, past and present. *Science as Culture* 1:101–117.

Levy, C. (2008). History of ornithology in the Caribbean. *Ornitología Neotropical* 19:S415–S426.

del Hoyo, J., ed. (2015). *Handbook of the Birds of the World Alive*. Lynx Edicions, Barcelona, Spain.

Liboiron, M. (2021). Decolonizing geoscience requires more than equity and inclusion. *Nature Geoscience* 14:876–877.

Lindell, C. A., and K. P. Huyvaert (2020). Advances in Neotropical ornithology: A special feature. *The Condor: Ornithological Applications* 122:duaa049.

Loaiza-Muñoz, M. A., D. M. Mosquera-Muñoz, J. C. Bermudez-Vera, and G. A. Londoño (2017). First description of the nest, egg, and nestling of Multicolored Tanager (*Chlorochrysa nitidissima*). *The Wilson Journal of Ornithology* 129:207–212.

Lombardi, V. T., R. Gonçalves Faetti, S. D'Angelo Neto, M. F. de Vasconcelos, and C. O. Araujo Gussoni (2010). Notas sobre a nidificação de aves brasileiras raras e/ou pouco conhecidas. *Cotinga* 32:131–136.

Lopes, L. E., and M. Marini (2005a). Biologia reprodutiva de *Suiriri affinis* e *S. islerorum* (Aves: Tyrannidae) no Cerrado do Brasil central. *Papéis Avulsos de Zoologia* 45:127–141.

Lopes, L. E., and M. Marini (2005b). Low reproductive success of Campo Suiriri (*Suiriri affinis*) and Chapada Flycatcher (*S. islerorum*) in the central Brazilian Cerrado. *Bird Conservation International* 15:337–346.

Lopes, L. E., and M. Â. Marini (2006). Home range and habitat use by *Suiriri affinis* and *S. islerorum* in central Brazilian Cerrado. *Studies on Neotropical Fauna and Environment* 41:87–92.

Lopez de Casenave, J. (2001). Estructura gremial y organización de un ensamble de aves del desierto del Monte. Ph.D. thesis, Universidad de Buenos Aires, Buenos Aires, Argentina.

Lopez de Casenave, J. (2017). Un Hornero de cien años. *El Hornero* 2:193–196.

López Ordóñez, J., J. Avendaño, N. Gutierrez-Pinto, and A. Cuervo (2014). The birds of the Serranía de Perijá: The northernmost avifauna of the Andes. *Ornitología Colombiana* 14:62–93.

Lucero, F. (2014). Descripción del nido y posturas de la Viudita Chica (*Knipolegus hudsoni*) en la provincia de San Juan, Argentina. *Nótulas Faunísticas (segunda serie)* 160:1–5.

Macedo, R. H., J. Karubian, and M. S. Webster (2008). Extrapair paternity and sexual selection in socially monogamous birds: Are tropical birds different? *The Auk* 125:769–777.

MacGregor-Fors, I., C. C. Rega-Brodsky, M. García-Arroyo, M. A. Gómez-Martínez, and L. -B. Vázquez (2020). Urban bird ecologists cite more publications from the Global North; why? *Journal of Urban Ecology* 6:1–4.

Madroño, A. (2016). Bird vocalizations as a tool to document Ache Indigenous traditional knowledge in the Atlantic Forest of Paraguay. *Revista Chilena de Ornitología* 22:89–106.

Malakoff, D. (2004). Rebels seize research team in Colombia. *Science* 304:1223.

Malpica-Piñeros, C., C. Sainz-Borgo, M. Ayala, and M. Lentino (2020). Ciclos anuales de colibríes (Aves: Trochilidae) en un bosque nublado, Parque Nacional Henri Pittier, Venezuela. *Revista de Biología Tropical* 68:260–275.

March Mifsut, I. J. M., and M. A. Lazcano Barrero (2012). *Relatos de fogata: Anécdotas y experiencias de biólogos y conservacionistas en el campo*. Comisión Nacional de Áreas Naturales Protegidas, Programa de las Naciones Unidas para el Desarrollo, Mexico.

Mares, M. A. (1986). Conservation in South America: problems, consequences, and solutions. *Science* 233:734–739.

Marini, M. Â, F. J. Borges, L. E. Lopes, L. França, C. Duca, L. V. Paiva, L. T. Manica, D. T. Gressler, and N. M. Heming (2010). Breeding biology of Columbidae in central Brazil. *Ornitología Neotropical* 21:581–590.

Marini, M. Â, F. J. A. Borges, L. E. Lopes, N. O. M. Sousa, D. T. Gressler, L. R. Santos, L. V. Paiva, C. Duca, L. T. Manica, S. S. Rodrigues,

et al. (2012). Breeding biology of birds in the Cerrado of central Brazil. *Ornitología Neotropical* 23:385–405.
Marone, L. (1992). Seasonal and year-to-year fluctuations of bird populations and guilds in the Monte Desert, Argentina. *Journal of Field Ornithology* 63:294–308.
Martinez, J., and N. P. Prestes (2008). *Biologia da conservação: estudo de caso com o Papagaio-charão e outros papagaios brasileiros*. Editora UPF, Passo Fundo, Brazil.
Martinez, J., and N. P. Prestes (2021). *Biologia da conservação: Programa nacional para a conservação do Papagaio-de-peito-roxo e outras iniciativas*. Livraria e Editora Werlang LTDA, Passo Fundo, Brazil.
Martínez, O., and J. Rechberger (2011). El nido, huevos y pollos del Guayabero Aceituna (*Chlorothraupis carmioli*, Aves, Thraupidae) en el oeste de Bolivia. *Ornitología Neotropical* 22:155–158.
Martínez, O., I. Gómez, and K. Naoki (2011). Nuevos reportes de aves amenazadas y poco conocidas en la Cuenca de Bermejo (Tarija), al sur de Bolivia. *Revista Boliviana de Ecología y Conservación Ambiental* 29:41–51.
Martínez-Gómez, J. E., and R. L. Curry (1996). The conservation status of the Socorro Mockingbird *Mimodes graysoni* in 1993–1994. *Bird Conservation International* 6:271–283.
Martínez-Gómez, J. E., H. M. Horblit, S. G. Stadler, and P. W. Shannon (2010). *Re-Introduction of the Socorro Dove, Socorro Island, Revillagigedo Archipelago, Mexico*. *In Global Re-introduction Perspectives* (P. S. Soorae, Editor). The IUCN/SSC Re-introduction Specialist Group (RSG).
Martínez-Medina, D., O. Acevedo-Charry, S. Medellín-Becerra, J. Rodríguez-Fuentes, S. López-Casas, S. Muñoz-Duque, and M. E. Rodríguez-Posada (2021). Status, development and trends of studies in fauna acoustics in Colombia. *Biota Colombiana* 22:7–25.
Masello, J. F., and P. Quillfeldt (2012). ¿Cómo reproducirse exitosamente en un ambiente cambiante? Biología reproductiva del Loro Barranquero (*Cyanoliseus patagonus*) en el noreste de la Patagonia. *El Hornero* 27:73–88.
Mason, J. (1996). *Qualitative Researching*. Sage, London, UK.
Mata, H., C. S. Fontana, G. N. Maurício, M. R. Bornschein, M. F. Vasconcelos, and S. L. Bonatto (2009). Molecular phylogeny and biogeography of the eastern tapaculos (Aves: Rhinocryptidae: *Scytalopus*, *Eleoscytalopus*): Cryptic diversification in Brazilian Atlantic Forest. *Molecular Phylogenetics and Evolution* 53:450–462.
Matthews, A., and P. Smith (2017). Breeding observations on Buff-bellied Puffbird *Notharchus swainsoni* (Piciformes: Bucconidae) at Rancho Laguna Blanca, San Pedro Department, Paraguay. *Revista Brasileira de Ornitologia* 25:20–23.
Maurício, G. N. (2013). First description of the nest of the Hooded Berryeater, *Carpornis cucullata*. *The Wilson Journal of Ornithology* 125:669–673.
McAndrews, A. E., J. E. Montejo-Díaz, and G. D. Alducin-Chávez (2008). First description of the egg and notes on the nest of the Cinnamon-tailed Sparrow (*Aimophila sumichrasti*). *Ornitología Neotropical* 19:123–127.
McCowan, T. (2007). Expansion without equity: An analysis of current policy on access to higher education in Brazil. *Higher Education* 53:579–598.
McGill, B. M., M. J. Foster, A. N. Pruitt, S. G. Thomas, E. R. Arsenault, J. Hanschu, K. Wahwahsuck, E. Cortez, K. Zarek, T. D. Loecke, *et al*. (2021). You are welcome here: A practical guide to diversity, equity, and inclusion for undergraduates embarking on an ecological research experience. *Ecology and Evolution* 11:3636–3645.
McKechnie, A. E., and A. Amar (2018). Missing the bigger picture: a response to Beale (2018). *Ostrich* 89:151–152.
McSherry, J. P. (2002). Tracking the origins of a state terror network: Operation Condor. *Latin American Perspectives* 29:38–60.
Melo, T. N., and R. S. Xavier (2017). First nest description for Spot-backed Antwren *Herpsilochmus dorsimaculatus*. *Bulletin of the British Ornithologists' Club* 137:152–155.
Méndez, G. E. (2021). MP realiza allanamientos por asesinato de Pedro Viteri. *Soy* 502. https://www.soy502.com/articulo/realizan-allanamientos-asesinato-pedro-viteri-escuintla-32419
Meneghini, R., A. L. Packer, and L. Nassi-Calò (2008). Articles by Latin American authors in prestigious journals have fewer citations. *PLoS One* 3:e3804.
Minasny, B., D. Fiantis, B. Mulyanto, Y. Sulaeman, and W. Widyatmanti (2020). Global soil science research collaboration in the 21st century: Time to end helicopter research. *Geoderma* 373:114299.
Mohammed, R. S., G. Turner, K. Fowler, M. Pateman, M. A. Nieves-Colón, L. Fanovich, S. B. Cooke, L. M. Dávalos, S. M. Fitzpatrick, C. M. Giovas, *et al*. (2022). Colonial legacies influence biodiversity lessons: How past trade routes and power dynamics shape present-day scientific research and professional opportunities for Caribbean scientists. The *American Naturalist* 200:140–155.
Monge-Nájera, J. (2002). How to be a tropical scientist. Science seen from childhood: The white man scientist stereotype. *Revista de Biología Tropical* 50:XIX–XXVIII.
Monjeau, A., J. R. Rau, and C. B. Anderson (2013). Latin America should ditch impact factors. *Nature* 499:29.
Moore, A. J., A. P. Beckerman, J. L. Firn, C. G. Foote, and G. B. Jenkins (2020). Nature Notes: A new category for natural history studies. *Ecology and Evolution* 10:7952.
Moreno, J., S. Merino, E. Lobato, M. A. Rodrígues-Gironés, and R. A. Vásquez (2007). Sexual dimorphism and parental roles in the Thorn-tailed Rayadito (Furnariidae). *The Condor* 109:312–320.
Morton, B., A. Vercueil, R. Masekela, E. Heinz, L. Reimer, S. Saleh, C. Kalinga, M. Seekles, B. Biccard, J. Chakaya, *et al*. (2022). Consensus statement on measures to promote equitable authorship in the publication of research from international partnerships. *Anaesthesia* 77:264–276.
Naranjo, L. G. (2008). El arcano de la ornitología colombiana. *Ornitología Colombiana* 7:5–16.
Naranjo, L., J. Correa, J. García, H. González, D. Hernández, B. Jiménez, J. Morales, A.G. Navarro, R. Vidal, L. Villaseñor, F. Villaseñor, and J. Colón (1992). Some suggestions for future cooperative work in Latin America: an outline. In *Ecology and Conservation of Neotropical Migrant Landbirds* (J. M. Hagan III and D. W. Johnston, Editors). Smithsonian Institution Press, Washington, DC, USA.
Nascimento, G. D., A. Pereira, G. R. R. Brito, C. K. M. Kolesnikovas, and P. P. Serafini (2022). Prevalência e tipos de plásticos em albatrozes e petréis (Aves: Procellariiformes): Recorte espacial da costa Sudeste e Sul do Brasil, de 2015 a 2019. *Biodiversidade Brasileira* 12:15–24.
Navarro, N. (2015). *Aves endémicas de Cuba. Guía de campo*. Ediciones Nuevos Mundos. La Habana, Cuba.
Navarro-Sigüenza, A. G., M. Rebón-Gallardo, A. Gordillo-Martínez, A. T. Peterson, H. Berlanga-García, and L. A. Sánchez-González (2014). Biodiversidad de aves en México. *Revista Mexicana de Biodiversidad* 85:S476–S495.
Newton, I. (2003). *Speciation and Biogeography of Birds*. Academic Press, London, UK.
Nuñez, M., M. C. Chiuffo, A. Pauchard, and R. D. Zenni (2021). Making ecology really global. *Trends in Ecology & Evolution* 36:766–769.
Ojeda, V. (2004). Breeding biology and social behaviour of Magellanic Woodpeckers (*Campephilus magellanicus*) in Argentine Patagonia. *European Journal of Wildlife Research* 50:18–24.
Ojeda, V., A. Schaaf, T. A. Altamirano, E. B. Bonaparte, L. Bragagnolo, L. Chazarreta, K. Cockle, R. Dias, F. Di Sallo, J. T. Ibarra, *et al*. (2021). Latitude does not influence cavity entrance orientation of South American avian excavators. *The Auk: Ornithological Advances* 138:ukaa064.
Ornelas, J. F., V. Sosa, D. E. Soltis, J. M. Daza, C. González, P. S. Soltis, C. Gutiérrez-Rodríguez, A. Espinosa de los Monteros, T. A. Castoe, C. Bell, *et al*. (2013). Comparative phylogeographic analyses illustrate the complex evolutionary history of threatened cloud forests of Northern Mesoamerica. *PLoS One* 8:e56283.
Ortiz Mendoza, C. A. (2013). Primera descripción del nido de Saltátor Collarejo (*Saltator cinctus*) y notas sobre su comportamiento reproductivo. *Ornitología Neotropical* 24:413–420.
Palomino, S. (2021). El guardián de loros asesinado a tiros en Colombia. *El País*, 14 January 2021.

Pautasso, A. A., and J. Cazenave (2002). Observaciones sobre la nidificación del Atajacaminos Tijera *Hydropsalis torquata* en el este de la provincia de Santa Fe, Argentina. *El Hornero* 17:99–104.
Paynter, R. A. (1991). The maturation of Brazilian ornithology. *Ararajuba* 2:105–106.
Peraza, C. A. (2011). Aves, Bosque Oriental de Bogotá Protective Forest Reserve, Bogotá, D.C., Colombia. *Check List* 7:57–63.
Pérez, M. (2022). Can academia be decolonized beyond the metaphor? *Journal for Critical Education Policy Studies* 20:21–40.
Pérez, M., and B. Radi (2019). Current challenges of North/South relations in gay-lesbian and queer studies. *Journal of Homosexuality* 67:965–989.
Pérez Ortega, R., and L. Wessel (2020). "We're losing an entire generation of scientists." COVID-19's economic toll hits Latin America hard. *Science*.
Pérez-Staples, D., and H. Drummond (2005). Tactics, effectiveness and avoidance of mate guarding in the Blue-footed Booby (*Sula nebouxii*). *Behavioral Ecology and Sociobiology* 59:115–123.
Pichorim, M. (2006). Reproduction of the Mottled Piculet in southern Brazil. *Journal of Field Ornithology* 77:244–249.
Pizarro, J. C., L. Moreno Salas, M. Martínez Jamett, T. A. Altamirano, J. Cabello Cabalín, C. A. Moraga, J. A. Vianna, J. T. Ibarra, I. Fernández Latapiat, C. Tala González, *et al.* (2020). Daniel González Acuña: Ornitólogo desde siempre y por siempre. *Revista Chilena de Ornitología* 26:114–116.
Pizo, M. A., and V. R. Tonetti (2020). Living in a fragmented world: Birds in the Atlantic Forest. *The Condor: Ornithological Applications* 122:duaa023.
Powers, J. S., T. A. Carlo, E. M. Slade, and F. Slik (2021). Biotropica announces a new paper category: Natural History Field Notes. *Biotropica* 53:352–353.
Pyle, P. (2008). *Identification Guide to North American Birds, Part II*. Slate Creek Press. Point Reyes Station, USA.
Quintero, C. (2011). Trading in birds: imperial power, national pride, and the place of nature in U.S.-Colombia relations. *ISIS* 102:421–445.
R Core Team (2021). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. http://www.R-project.org/
Raby, M. (2017a). *American Tropics: The Caribbean Roots of Biodiversity Science*. University of North Carolina Press, Chapel Hill, NC, USA.
Raby, M. (2017b). The colonial origins of tropical field stations. *American Scientist* 105:216–223.
Ramírez-Castañeda, V. (2020). Disadvantages in preparing and publishing scientific papers caused by the dominance of the English language in science: The case of Colombian researchers in biological sciences. *PLoS One* 15:e0238372.
Ramírez-Castañeda, V., E. P. Westeen, J. Frederick, S. Amini, D. R. Wait, A. S. Achmadi, N. Andayani, E. Arida, U. Arifin, M. A. Bernal, *et al.* (2022). A set of principles and practical suggestions for equitable fieldwork in biology. *Proceedings of the National Academy of Sciences USA* 119:e2122667119.
Ramos, M. A. (1988). The conservation of biodiversity in Latin America: A perspective. In *Biodiversity* (E. O. Wilson and F. M. Peter, Editors). National Academies of Science and Smithsonian Institution. Washington, DC, USA.
Rapoport, E. H. (1975). *Aerografía: Estrategias Geográficas de las Especies*. Fondo de Cultura Económica, Mexico City, Mexico.
Rapoport, E. H. (1982). *Areography: Geographical Strategies of Species*. Pergamon Press, Oxford, UK.
Rapoport, E. H. (2015). *Aventuras y desventuras de un biólogo latinoamericano*. Fundación de Historia Natural Félix de Azara, Buenos Aires, Argentina.
Rau, J. R., A. Monjeau, J. C. Pizarro, and C. B. Anderson (2017). Cuanto más publicamos menos nos citan. *Ecología Austral* 27:385–391.
Rau, H., G. Goggins, and F. Fahy (2018). From invisibility to impact: Recognising the scientific and societal relevance of interdisciplinary sustainability research. *Research Policy* 47:266–276.
Reboreda, J. C., V. D. Fiorini, and D. T. Tuero (2019). *Behavioral Ecology of Neotropical Birds*. Springer, Cham, Switzerland.
Reid, A. J., L. E. Eckert, J. Lane, N. Young, S. G. Hinch, C. T. Darimont, S. J. Cooke, N. C. Ban, and A. Marshall (2021). "Two-Eyed Seeing": An Indigenous framework to transform fisheries research and management. *Fish and Fisheries* 22:243–261.
Remsen, J. V. (1997). *Studies in Neotropical Ornithology honoring Ted Parker*. Ornithological Monographs, no. 48. American Ornithologists' Union. Washington, DC, USA.
Remsen, J. V., and T. S. Schulenberg (1997). The pervasive influence of Ted Parker on Neotropical Field Ornithology. In *Studies in Neotropical Ornithology honoring Ted Parker.* Ornithological Monographs (J. V. Remsen, Editor). Ornithological Monographs 48:7–19.
Remsen, J. V., Jr., J. I. Areta, E. Bonaccorso, S. Claramunt, A. Jaramillo, D. F. Lane, J. F. Pacheco, M. B. Robbins, F. G. Stiles, and K. J. Zimmer (2021). *A classification of the bird species of South America*. American Ornithological Society. http://www.museum.lsu.edu/~Remsen/SACCBaseline.htm
Renton, K. (2001). Lilac-crowned Parrot diet and food resource availability: resource tracking by a parrot seed predator. *The Condor* 103:62–69.
Renton, K., and A. Salinas-Melgoza (2004). Climatic variability, nest predation, and reproductive output of Lilac-crowned Parrots (*Amazona finschi*) in tropical dry forest of western Mexico. *The Auk* 121:1214–1225.
Renton, K., A. Salinas-Melgoza, R. Rueda-Hernández, and L. D. Vázquez Reyes (2018). Differential resilience to extreme climate events of tree phenology and cavity resources in tropical dry forest: cascading effects on a threatened species. *Forest Ecology and Management* 426:164–175.
Repenning, M. (2012). *História natural, com ênfase na biologia reprodutiva, de uma população migratoria de Sporophila aff. plumbea (Aves, Emberizidae) do sul do Brasil*. Master's dissertation, Pontificia Universidade Católica do Rio Grande do Sul. Porto Alegre, Brazil.
Rheindt, F. E., and H. Quispe Vela (2008). Descripción del nido y de los polluelos del Solitario Orejiblanco *Entomodestes leucotis*. *Cotinga* 30:70–71.
Ríos-Saldaña, C. A., M. Delibes-Mateos, and C. C. Ferreira (2018). Are fieldwork studies being relegated to second place in conservation science? *Global Ecology and Conservation* 14:e00389.
Ritter, C. D., L. A. Coelho, J. M. Capurucho, S. H. Borges, C. Cornelius, and C. C. Ribas (2021). Sister species, different histories: comparative phylogeography of two bird species associated with Amazonian open vegetation. *Biological Journal of the Linnean Society* 132:161–173.
Rodrigues, M., L. M. Costa, G. H. S. Freitas, M. Cavalcanti, and D. F. Dias (2009). Ninhos e ovos de *Emberizoides herbicola*, *Emberizoides ypiranganus* e *Embernagra longicauda* (Passeriformes: Emberizidae) no Parque Nacional da Serra do Cipó, Minas Gerais, Brasil. *Revista Brasileira de Ornitologia* 17:155–160.
Rodrigues, R. C., E. Hasui, J. C. Assis, J. C. C. Pena, R. L. Muylaert, V. Rodrigues Tonetti, F. Martello, A. L. Regolin, T. V. V. da Costa, M. Pichorim, E. Carrano, *et al.* (2019). ATLANTIC BIRD TRAITS: a data set of bird morphological traits from the Atlantic forests of South America. *Ecology* 100:e02647.
Rodríguez, J. P., A. B. Taber, P. Daszak, R. Sukumar, C. Valladares-Padua, S. Padua, L. F. Aguirre, R. A. Medellín, M. Acosta, A. A. Aguirre, *et al.* (2007). Globalization of conservation: A view from the South. *Science* 317:755–756.
Rosenberg, K. V., A. M. Dokter, P. J. Blancher, J. R. Sauer, A. C. Smith, P. A. Smith, J. C. Stanton, A. Panjabi, L. Helft, M. Parr, *et al.* (2019). Decline of the North American avifauna. *Science* 366:120–124.
Rosenblatt, C. J., A. A. Dayer, J. N. Duberstein, T. B. Phillips, H. W. Harshaw, D. C. Fulton, N. W. Cole, A. H. Raedeke, J. D. Rutter, and C. L. Wood (2022). Highly specialized recreationists contribute the most to the citizen science project eBird. *Ornithological Applications* 124:duac008.
Ross-Hellauer, T. (2022). Open science, done wrong, will compound inequities. *Nature* 603:363.

Rozzi, R. (2013). Biocultural ethics: From biocultural homogenization toward biocultural conservation. In *Linking Ecology and Ethics for a Changing World. Values, Philosophy, and Action* (R. Rozzi, S. T. A. Pickett, C. Palmer, J. J. Armesto, and J. B. Callicott, Editors). Springer, New York, NY, USA.

Rozzi, R., and J. E. Jiménez (2014). *Magellanic Sub-Antarctic Ornithology: First Decade of Long-term Studies at the Omora Ethnobotanical Park, Cape Horn Biosphere Reserve, Chile*. Ediciones de la Universidad de Magallanes, Chile, and University of North Texas Press, Santiago, Chile.

Ruelas Inzunza, E. (2009). Writing and citing "international" names. *Frontiers in Ecology and the Environment* 7:351–352.

Ruelas Inzunza, E., L. J. Goodrich, S. W. Hoffman, and R. Tingay (2000). Conservation strategies for the world's largest raptor migration flyway: Veracruz, The River of Raptors. In *Raptors at Risk* (R. D. Chancellor and B.-U. Meyburg, Editors). Hancock House Publishers, Surrey, BC, Canada. pp. 591–596.

Ruelas Inzunza, E., L. J. Goodrich, S. W. Hoffman, E. Martínez Leyva, J. P. Smith, E. Peresbarbosa Rojas, R. Rodríguez Mesa, K. L. Scheuermann, S. L. Mesa Ortiz, Y. Cabrera Carrasco, N. Ferriz, R. Straub, M. M. Peñaloza, and J. G. Barrios. (2009). Long-term conservation of migratory birds in México: The Veracruz River of Raptors Project. In *Tundra to Tropics: Connecting Birds, Habitats and People* (T. D. Rich, C. Arizmendi, D. Demarest, and C. Thompson, Editors). Proceedings of the 4th International Partners in Flight Conference. Partners in Flight, Washington, DC, USA.

Ruelas Inzunza, E., L. J. Goodrich, and S. W. Hoffman (2010). North American population estimates of waterbirds, vultures, and hawks from migration counts in Veracruz, Mexico. *Bird Conservation International* 20:124–133.

Ruelas Inzunza, E., R. T. Zepilli, and D. F. Stotz (2012). Birds. In *Perú: Cerros de Kampankis. Rapid Biological and Social Inventories No. 24* (N. Pitman, Editor). The Field Museum, Chicago, Illinois, USA. pp. 273–282.

Ruelas Inzunza, E., K. L. Cockle, M. G. Núñez Montellano, C. S. Fontana, C. Cuatianquiz Lima, M. A. Echeverry-Galvis, R. A. Fernández-Gómez, F. A. Montaño-Centellas, E. Bonaccorso, S. A. Lambertucci, C. Cornelius, *et al.* (2023). How to include and recognize the work of ornithologists based in the Neotropics: Fourteen actions for Ornithological Applications, Ornithology, and other global-scope ornithological journals. *Ornithological Applications* 125:duac047.

Ruggera, R. A., A. A. Schaaf, C. G. Vivanco, N. Politi, and L. O. Rivera (2016). Exploring nest webs in more detail to improve forest management. *Forest Ecology and Management* 372:93–100.

Ruiz, E. A., E. Velarde, and A. Aguilar (2017). Demographic history of the Heermann's Gull (*Larus heermanni*) from late Quaternary to present: Effects of past climate change in the Gulf of California. *The Auk: Ornithological Advances* 134:308–316.

Rutter, J. D., A. A. Dayer, H. W. Harshaw, N. W. Cole, J. N. Duberstein, D. C. Fulton, A. H. Raedeke, and R. M. Schuster (2021). Racial, ethnic, and social patterns in the recreation specialization of birdwatchers: an analysis of United States eBird registrants. *Journal of Outdoor Recreation and Tourism* 35:100400.

Sagario, M. C., V. R. Cueto, A. Zarco, R. Pol, and L. Marone (2020). Predicting how seed-eating passerines respond to cattle grazing in a semiarid grassland using seed preferences and diet. *Agriculture, Ecosystems and Environment* 289:106736.

Saibene, C. A. (1995). Nidificación de aves en Misiones II. *Nuestras Aves* 31:20.

Salerno, P. E., M. Páez-Vacas, J. M. Guayasamin, and J. L. Stynoski (2019). Male principal investigators (almost) don't publish with women in ecology and zoology. *PLoS One* 14:e0218598.

Sanabria Mejía, J. S. (2010). *Aproximación a la biología reproductiva del Loro Multicolor Hapalopsittaca amazonina velezi en una localidad de la Cordillera Central, Tolima*. Undergraduate Thesis, Universidad del Tolima, Ibagué, Tolima, Colombia.

Sánchez, G., and M. A. Aponte (2006). Primera descripción del nido y huevos de *Conopophaga ardesiaca*. *Kempffiana* 2:102–105.

Sánchez, J. E., C. Porras, and L. Sandoval (2013). Descripción del nido y la cópula del Pájaro Campana Tricarunculado (*Procnias tricarunculatus*). *Ornitología Neotropical* 24:235–240.

Sánchez, J. E., K. Conejo-Barboza, C. Sánchez, D. Calderón-Franco, and L. Sandoval (2016). Description of the nest and eggs of the Green Thorntail (*Discosura conversii*). *Ornitología Neotropical* 27:73–76.

Sánchez-Mercado, A., O. Blanco, B. Sucre, J. M. Briceño-Linares, C. Peláez, and J. P. Rodríguez (2022). When good attitudes are not enough: Understanding intentions to keep Yellow-shouldered Amazons as pets on Margarita Island, Venezuela. *Oryx* 56:209–217.

Sandoval, L., and G. Barrantes (2009). Relationship between species richness of excavator birds and cavity-adopters in seven tropical forests in Costa Rica. *The Wilson Journal of Ornithology* 121:75–81.

Sandoval, L., and I. Escalante (2010). Nest description of the Garden Emerald (*Chlorostilbon assimilis*) from Costa Rica. *The Wilson Journal of Ornithology* 122:597–599.

Santander, F., S. Alvarado, and C. F. Estades (2021). Effect of forest cover on raptor abundance in exotic forest plantations in Chile. *Ardeola* 68:391–408.

Sanz, V., and A. Rodríguez-Ferraro (2006). Reproductive parameters and productivity of the Yellow-shouldered Parrot on Margarita Island, Venezuela: A long-term study. *The Condor* 108:178–192.

Schell, C. J., C. Guy, D. S. Shelton, S. C. Campbell-Staton, B. A. Sealey, D. N. Lee, and N. C. Harris (2020). Recreating Wakanda by promoting Black excellence in ecology and evolution. *Nature Ecology & Evolution* 4:1285–1287.

Schwartz, P. (1968). Notes on two Neotropical nightjars, *Caprimulgus anthonyi* and *C. parvulus*. *The Condor* 70:223–227.

Schwartz, P. (1972). *Micrastur gilvicollis*, a valid species sympatric with *M. ruficollis* in Amazonia. *The Condor* 74:399–415.

Sclater, P. L. (1858). On the general geographical distribution of the members of the Class Aves. *Journal of the Proceedings of the Linnean Society of London* 2:130–145.

Scott, J. (2021). When eBird meets Black birders. Network in Canadian History and Environment. https://niche-canada.org/2021/03/17/when-ebird-meets-black-birders/

Sedano, R., M. Reyes-Gutiérrez, and D. Fajardo (2008). Descripción de la anidación, el comportamiento de forrajeo y las vocalizaciones del Carpinterito Gris (*Picumnus granadensis*). *Ornitología Colombiana* 6:5–14.

Serwadda, D., P. Ndebele, M. K. Grabowski, F. Bajunirwe, and R. K. Wanyenze (2018). Open data sharing and the Global South—Who benefits? *Science* 359:642–643.

Sevy-Biloon, J., U. Recino, and C. Munoz (2020). Factors affecting English language teaching in public schools in Ecuador. *International Journal of Learning, Teaching and Educational Research* 19:276–294.

Silva, J. M. C., D. C. Oren, and M. de F. C. Lima (2005). Fernando Novaes: O fundador da moderna ornitologia brasileira. *Boletim do Museu Paraense Emílio Goeldi, Série Ciências Naturais* 1:249–254.

Singeo, A., and C. E. Ferguson (2022). Lessons from Palau to end parachute science in international conservation research. *Conservation Biology* 2022:e13971.

Siqueira-Gay, J., B. Soares-Filho, L. E. Sanchez, A. Oviedo, and L. J. Sonter (2020). Proposed legislation to mine Brazil's Indigenous lands will threaten Amazon forests and their valuable ecosystem services. *One Earth* 3:356–362.

Siqueira-Pereira, H., E. Hasui, G. dos Reis Menezes, and E. Batista Ferreira (2009). Efeitos diretos e indiretos da fragmentação sobre as redes de nidificação. *Ornitología Neotropical* 20:431–444.

Smith, C., and G. Londoño (2014). First description of the nest, eggs, incubation behavior, and nestlings of Trilling Tapaculo (*Scytalopus parvirostris*). *The Wilson Journal of Ornithology* 126:81–85.

Smith, A. C., L. Merz, J. B. Borden, C. K. Gulick, A. R. Kshirsagar, and E. M. Bruna (2021). Assessing the effect of article processing charges on the geographic diversity of authors using Elsevier's "Mirror Journal" system. *Quantitative Science Studies* 2:1123–1143.

Smyth, C. H. (1928). Descripción de una colección de huevos de aves argentinas. *El Hornero* 4:125–152.
Snow, S. S., L. Sandoval, and H. F. Greeney (2017). The nest and eggs of the Rufous Mourner (*Rhytipterna h. holerythra*). *The Wilson Journal of Ornithology* 129:626–630.
Snyder, N. F., H. Raffaelle, A. Kirkconnell, and J. Wunderle (2019). James W. Wiley, 1943–2018. *The Auk* 136:ukz037.
Spiller, C., R. M. Wolfgramm, E. Henry, and R. Pouwhare (2020). Paradigm warriors: Advancing a radical ecosystem view of collective leadership from an Indigenous Māori perspective. *Human Relations* 73:516–543.
Steigerwald, E., V. Ramírez-Castañeda, D. Y. C. Brandt, A. Báldi, J. T. Shapiro, L. Bowker, and R. D. Tarvin. (2022). Overcoming language barriers in academia: Machine translation tools and a vision for a multilingual future. *Bioscience* 72:988–998.
Stevens, G. C. (1989). Latitudinal gradient in geographical range: how so many species coexist in the tropics. *American Naturalist* 133:240–256.
Stiles, F. G., L. Roselli, and S. de la Zerda (2017). Changes over 26 years in the avifauna of the Bogotá region, Colombia: Has climate change become important? *Frontiers in Ecology and Evolution* 5:58.
Stiles, F. G., L. Roselli, and S. de la Zerda (2021). Una avifauna en cambio: 26 años de conteos navideños en la Sabana de Bogotá, Colombia. *Ornitología Colombiana* 19:1–65.
Stopiglia, R., W. Barbosa, M. Ferreira, M. A. Raposo, A. Dubois, M. G. Harvey, G. M. Kirwan, G. Forcato, F. A. Bockmann, and C. C. Ribas (2022). Taxonomic challenges posed by discordant evolutionary scenarios supported by molecular and morphological data in the Amazonian *Synallaxis rutilans* group (Aves: Furnariidae). *Zoological Journal of the Linnean Society* 195:65–87.
Strahl, S. D. (1992). Furthering avian conservation in Latin America. *The Auk* 109:680–682.
Straneck, R. J. (1987). Aportes sobre el comportamiento y distribución de la Cachirla Armillenta, *Anthus lutescens* Pucheran y la Cachirla Chaqueña, *Anthus chacoensis* Zimmer. *Revista del Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Zoología* 14:95–102.
Straneck, R. J. (1990). *Canto de las aves de los esteros y palmares*. LOLA, Buenos Aires, Argentina.
Straneck, R. J. (1993). Aportes para la unificación de *Serpophaga subcristata* y *Serpophaga munda*, y la revalidación de *Serpophaga griseiceps* (Aves: Tyrannidae). *Revista del Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Zoología* 16:51–63.
Straneck, R. (2007). Una nueva especie de *Serpophaga* (Aves: Tyrannidae). *Revista FAVE - Ciencias Veterinarias* 6:32–37.
Straneck, R., and F. Vidoz (1995). Sobre el estado taxonómico de *Strix rufipes* (King) y de *Strix chacoensis* (Cherrie and Reichenberger). *Nótulas Faunísticas* 74:1–5.
Strewe, R. (2001). Notes on nests and breeding activity of fourteen bird species from southwestern Colombia. *Ornitología Neotropical* 12:265–269.
Stutchbury, B. J. M., and E. S. Morton (2001). *Behavioral Ecology of Tropical Birds*. Academic Press, San Diego, California, USA.
Stutchbury, B. J. M., and E. Morton (2008). Recent advances in the behavioral ecology of tropical birds. *The Wilson Journal of Ornithology* 120:26–37.
Sullivan, B. L., C. L. Wood, M. J. Iliff, R. E. Bonney, D. Fink, and S. Kelling (2009). eBird: A citizen-based bird observation network in the biological sciences. *Biological Conservation* 142:2282–2292.
Tambussi, C. P., and F. Degrange (2013). *South American and Antarctic Continental Cenozoic Birds: Paleobiogeographic Affinities and Disparities*. Springer, Dordrecht, The Netherlands.
Tanaka, R. M., E. Muscat, and E. Laura (2016). First record of *Philydor atricapillus* nesting in bamboo (*Guadoa* [sic] *tagoara*). *Atualidades Ornitológicas* 194:26.
Toledo, L. F., and C. B. Araújo (2017). Zoophonie: les origines de la bioacoustique. In *Hercule Florence: Le Nouveau Robinson* (L. F. Nagler and C. Raimondi, Editors). Humboldt Books, Milan, Italy.
Torres, C. A., and D. Schugurensky (2002). The political economy of higher education in the era of neoliberal globalization: Latin America in comparative perspective. *Higher Education* 43:429–455.
Trisos, C. H., J. Auerbach, and M. Katti (2021). Decoloniality and anti-oppressive practices for a more ethical ecology. *Nature Ecology & Evolution* 5:1205–1212.
Tulloch, A. I. T. (2020). Improving sex and gender identity equity and inclusion at conservation and ecology conferences. *Nature Ecology & Evolution* 4:1311–1320.
Uezu, A., J. P. Metzger, and J. M. E. Vielliard (2005). Effects of structural and functional connectivity and patch size on the abundance of seven Atlantic Forest bird species. *Biological Conservation* 123:507–519.
Urbina-Blanco, C. A., S. Z. Jilani, I. R. Speight, M. J. Bojdys, T. Friščić, J. F. Stoddart, T. L. Nelson, J. Mack, R. A. S. Robinson, E. A. Waddell, *et al*. (2020). A diverse view of science to catalyse change. *Angewandte Chemie International Edition* 59:18306–18310.
Valderrama, S. V., J. E. Parra, and N. Dávila (2007). First nest description for Niceforo's Wren (*Thryothorus nicefori*): A critically endangered Colombian endemic songbird. *Ornitología Neotropical* 18:313–318.
Valdez-Juarez, S. O., and G. A. Londoño (2016). Nesting biology of Carmiol's Tanager (*Chlorothraupis carmioli frenata*) in southeastern Peru. *The Wilson Journal of Ornithology* 128:794–803.
Valenzuela-Toro, A. M., and M. Viglino (2021). How Latin American researchers suffer in science. *Nature* 598:374–375.
Vaske Júnior, T. (1991). Seabirds mortality on longline fishing for tuna in southern Brazil. *Ciência e Cultura* 43:388–390.
Veit, R. R., E. Velarde, M. H. Horn, and L. L. Manne (2021). Population growth and long-distance vagrancy leads to colonization of Europe by Elegant Terns *Thalasseus elegans*. *Frontiers in Ecology and Evolution* 9:725614.
Velarde, E. (1992). Predation of Heermann's Gull (*Larus heermanni*) chicks by Yellow-footed Gulls (*Larus livens*) in dense and scattered nesting sites. *Colonial Waterbirds* 15:8–13.
Velarde, E., E. Ezcurra, and D. W. Anderson (2015). Seabird diet predicts following-season commercial catch of Gulf of California Pacific sardine and northern anchovy. *Journal of Marine Systems* 146:82–88.
Velarde, E., D. W. Anderson, and E. Ezcurra (2019). Seabird clues to ecosystem health. *Science* 365:116–117.
Vielliard, J. M. E. (1983). Catálogo sonográfico dos cantos e piados dos beija-flores do Brasil, 1. *Boletim do Museu de Biologia Mello Leitão, Série Biologia* 58:1–20.
Vielliard, J. (1990). Estudo bioacústico das aves do Brasil: o gênero *Scytalopus*. *Ararajuba* 1:5–18.
Vizentin-Bugoni, J., P. K. Maruyama, and M. Sazima (2014). Processes entangling interactions in communities: forbidden links are more important than abundance in a hummingbird–plant network. *Proceedings of the Royal Society B* 281:20132397.
de Vos, A. (2022). Stowing parachutes, strengthening science. *Conservation Science and Practice* 4:e12709.
Voss, W. A. (2009). William "Bill" Belton and ornithology in Rio Grande do Sul. *Revista Brasileira de Ornitologia* 17:161–162.
Vuilleumier, F. (1995). Five great Neotropical ornithologists: an appreciation of Eugene Eisenmann, Maria Koepcke, Claës Olrog, Rodulfo Phllippi, and Helmut Sick. *Ornitología Neotropical* 6:97–111.
Vuilleumier, F. (2003). Neotropical ornithology: Then and now. *The Auk* 120:577–590.
Yorio, P., F. Quintana, and J. Lopez de Casenave (2005). Ecología y conservación de las aves marinas del litoral marítimo argentino. *El Hornero* 20:1–3.
Yua, E., J. Raymond-Yakoubian, R. Aluaq Daniel, and C. Behe (2022). A framework for co-production of knowledge in the context of Arctic research. *Ecology and Society* 27:34.
Zima, P. V. Q., D. F. Perrella, C. H. Biagolini-Jr, L. Ribeiro-Silva, and M. R. Francisco (2017). Breeding behavior of the Atlantic Forest endemic Blue Manakin (*Chiroxiphia caudata*). *The Wilson Journal of Ornithology* 129:53–61.
Zyskowski, K., J. C. Mittermeier, and E. S. Stowe (2008). First description of the nest of the Band-tailed Antshrike *Thamnophilus melanothorax*. *Revista Brasileira de Ornitologia* 16:246–249.