Boeger, Walter A, Valim, Michel P, Zaher, Hussam, Rafael, José A, Forzza, Rafaela C, Percequillo, Alexandre R, Serejo, Cristiana S, Garraffoni, André RS, Santos, Adalberto J, Slipinski, Adam, Linzmeier, Adelita M, Calor, Adolfo R, Garda, Adrian A, Kury, Adriano B, Fernandes, Agatha CS, Agudo-Padrón, Aisur I, Akama, Alberto, Silva Neto, Alberto M da, Burbano, Alejandro L, Menezes, Aleksandra, Pereira-Colavite, Alessandre, Anichtchenko, Alexander, Lees, Alexander C, Bezerra, Alexandra MR, Domahovski, Alexandre C, Pimenta, Alexandre D, Aleixo, Alexandre LP, Marceniuk, Alexandre P, Paula, Alexandre S de, Somavilla, Alexandre, Specht, Alexandre, Camargo, Alexssandro, Newton, Alfred F, Silva, Aline AS da, Santos, Aline B dos, Tassi, Aline D, Aragão, Allan C, Santos, Allan PM, Migotto, Alvaro E, Mendes, Amanda C, Cunha, Amanda, Chagas Júnior, Amazonas, Sousa, Ana AT de, Pavan, Ana C, Almeida, Ana CS, Peronti, Ana LBG, Henriques-Oliveira, Ana L, Prudente, Ana L, Tourinho, Ana L, Pes, Ana MO, Carmignotto, Ana P, Wengrat, Ana PG da Silva, Dornellas, Ana PS, Molin, Anamaria Dal, Puker, Anderson, Morandini, André C, Ferreira, André da S, Martins, André L, Esteves, André M, Fernandes, André S, Roza, André S, Köhler, Andreas, Paladini, Andressa, Andrade, Andrey J de, Pinto, Ângelo P, Salles, Anna C de A, Gondim, Anne I, Amaral, Antonia CZ, Rondón, Antonio AA, Brescovit, Antonio, Lofego, Antônio C, Marques, Antonio C, Macedo, Antonio, Andriolo, Artur, Henriques, Augusto L, Ferreira Júnior, Augusto L, Lima, Aurino F de, Barros, Ávyla R de A, Brito, Ayrton do R, Romera, Bárbara LV, Vasconcelos, Beatriz MC de, Frable, Benjamin W, Santos, Bernardo F, Ferraz, Bernardo R, Rosa, Brunno B, Sampaio, Brunno HL, Bellini, Bruno C, Clarkson, Bruno, Oliveira, Bruno G de, Corrêa, Caio CD, Martins, Caleb C, Castro-Guedes, Camila F de, Souto, Camilla, Bicho, Carla de L, Cunha, Carlo M, Barboza, Carlos A de M, Lucena, Carlos AS de, Barreto, Carlos, Santana, Carlos DCM de, Agne, Carlos EQ, Mielke, Carlos GC, Caetano, Carlos HS, Flechtmann, Carlos HW, Lamas, Carlos JE, Rocha, Carlos, Mascarenhas, Carolina S, Margaría, Cecilia B, Waichert, Cecilia, Digiani, Celina, Haddad, Célio FB, Azevedo, Celso O, Benetti, Cesar J, Santos, Charles MD dos, Bartlett, Charles R, Bonvicino, Cibele, Ribeiro-Costa, Cibele S, Santos, Cinthya SG, Justino, Cíntia EL, Canedo, Clarissa, Bonecker, Claudia C, Santos, Cláudia P, Carvalho, Claudio JB de, Gonçalves, Clayton C, Galvão, Cleber, Costa, Cleide, Oliveira, Cléo DC de, Schwertner, Cristiano F, Andrade, Cristiano L, Pereira, Cristiano M, Sampaio, Cristiano, Dias, Cristina de O, Lucena, Daercio A de A, Manfio, Daiara, Amorim, Dalton de S, Queiroz, Dalva L de, Queiroz, Dalva L de, Colpani, Daniara, Abbate, Daniel, Aquino, Daniel A, Burckhardt, Daniel, Cavallari, Daniel C, Prado, Daniel de C Schelesky, Praciano, Daniel L, Basílio, Daniel S, Benà, Daniela de C, Toledo, Daniela GP de, Takiya, Daniela M, Fernandes, Daniell RR, Ament, Danilo C, Cordeiro, Danilo P, Silva, Darliane E, Pollock, Darren A, Muniz, David B, Gibson, David I, Nogueira, David S, Marques, Dayse WA, Lucatelli, Débora, Garcia, Deivys MA, Baêta, Délio, Ferreira, Denise NM, Rueda-Ramírez, Diana, Fachin, Diego A, Souza, Diego de S, Rodrigues, Diego F, Pádua, Diego G de, Barbosa, Diego N, Dolibaina, Diego R, Amaral, Diogo C, Chandler, Donald S, Maccagnan, Douglas HB, Caron, Edilson, Carvalho, Edrielly, Adriano, Edson A, Abreu Júnior, Edson F de, Pereira, Edson HL, Viegas, Eduarda FG, Carneiro, Eduardo, Colley, Eduardo, Eizirik, Eduardo, Santos, Eduardo F dos, Shimbori, Eduardo M, Suárez-Morales, Eduardo, Arruda, Eliane P de, Chiquito, Elisandra A, Lima, Élison FB, Castro, Elizeu B de, Orlandin, Elton, Nascimento, Elynton A do, Razzolini, Emanuel, Gama, Emanuel RR, Araujo, Enilma M de, Nishiyama, Eric Y, Spiessberger, Erich L, Santos, Érika CL dos, Contreras, Eugenia F, Galati, Eunice AB, Oliveira Junior, Evaldo C de, Gallardo, Fabiana, Hernandes, Fabio A, Lansac-Tôha, Fábio A, Pitombo, Fabio B, Dario, Fabio Di, Santos, Fábio L dos, Mauro, Fabio, Nascimento, Fabio O do, Olmos, Fabio, Amaral, Fabio R, Schunck, Fabio, Godoi, Fábio SP de, Machado, Fabrizio M, Barbo, Fausto E, Agrain, Federico A, Ribeiro, Felipe B, Moreira, Felipe FF, Barbosa, Felipe F, Silva, Fenanda S, Cavalcanti, Fernanda F, Straube, Fernando C, Carbayo, Fernando, Carvalho Filho, Fernando, Zanella, Fernando CV, Jacinavicius, Fernando de C, Farache, Fernando HA, Leivas, Fernando, Dias, Fernando MS, Mantellato, Fernando, Vaz-de-Mello, Fernando Z, Gudin, Filipe M, Albuquerque, Flávio, Molina, Flavio B, Passos, Flávio D, Shockley, Floyd W, Pinheiro, Francielly F, Mello, Francisco de AG de, Nascimento, Francisco E de L, Franco, Francisco L, Oliveira, Francisco L de, Melo, Francisco T de V, Quijano, Freddy RB, Salles, Frederico F, Biffi, Gabriel, Queiroz, Gabriel C, Bizarro, Gabriel L, Hrycyna, Gabriela, Leviski, Gabriela, Powell, Gareth S, Santos, Geane B dos, Morse, Geoffrey E, Brown, George, Mattox, George MT, Zimbrão, Geraldo, Carvalho, Gervásio S, Miranda, Gil FG, Moraes, Gilberto J de, Lourido, Gilcélia M, Neves, Gilmar P, Moreira, Gilson RP, Montingelli, Giovanna G, Maurício, Giovanni N, Marconato, Gláucia, Lopez, Guilherme EL, Silva, Guilherme L da, Muricy, Guilherme, Brito, Guilherme RR, Garbino, Guilherme ST, Flores, Gustavo E, Graciolli, Gustavo, Libardi, Gustavo S, Proctor, Heather C, Gil-Santana, Helcio R, Varella, Henrique R, Escalona, Hermes E, Schmitz, Hermes J, Rodrigues, Higor DD, Galvão Filho, Hilton de C, Quintino, Hingrid YS, Pinto, Hudson A, Rainho, Hugo L, Miyahira, Igor C, Gonçalves, Igor de S, Martins, Inês X, Cardoso, Irene A, Oliveira, Ismael B de, Franz, Ismael, Fernandes, Itanna O, Golfetti, Ivan F, S. Campos-Filho, Ivanklin, Oliveira, Ivo de S, Delabie, Jacques HC, Oliveira, Jader

SPECIAL ISSUE
ANIMAL LIFE IN BRAZIL
TAXONOMY, RICHNESS, DISTRIBUTION

ZOOLOGIA 41: e24005
ISSN 1984-4689 (online)
scielo.br/zool

RESEARCH ARTICLE
TAXONOMIC CATALOG OF THE BRAZILIAN FAUNA

Catálogo Taxonômico da Fauna do Brasil: Setting the baseline knowledge on the animal diversity in Brazil

Walter A. Boeger[1,9], Michel P. Valim[2,9], Hussam Zaher[3,9], José A. Rafael[4,9], Rafaela C. Forzza[5], Alexandre R. Percequillo[6,9], Cristiana S. Serejo[7,9], André R.S. Garraffoni [8,9], Adalberto J. Santos[9], Adam Slipinski[9], Adelita M. Linzmeier[9], Adolfo R. Calor[9], Adrian A. Garda[9], Adriano B. Kury[9], Agatha C.S. Fernandes[9], Aisur I. Agudo-Padrón[9], Alberto Akama[9], Alberto M. da Silva Neto[9], Alejandro L. Burbano[9], Aleksandra Menezes[9], Alessandre Pereira-Colavite[9], Alexander Anichtchenko[9], Alexander C. Lees[9], Alexandra M.R. Bezerra[9], Alexandre C. Domahovski[9], Alexandre D. Pimenta[9], Alexandre L.P. Aleixo[9], Alexandre P. Marceniuk[9], Alexandre S. de Paula[9], Alexandre Somavilla[9], Alexandre Specht[9], Alexssandro Camargo[9], Alfred F. Newton[9], Aline A.S. da Silva[9], Aline B. dos Santos[9], Aline D. Tassi[9], Allan C. Aragão[9], Allan P.M. Santos[9], Alvaro E. Migotto[9], Amanda C. Mendes[9], Amanda Cunha[9], Amazonas Chagas Júnior[9], Ana A.T. de Sousa[9], Ana C. Pavan[9], Ana C.S. Almeida[9], Ana L.B.G. Peronti[9], Ana L. Henriques-Oliveira[9], Ana L. Prudente[9], Ana L. Tourinho[9], Ana M.O. Pes[9], Ana P. Carmignotto[9], Ana P.G. da Silva Wengrat[9], Ana P.S. Dornellas[9], Anamaria Dal Molin[9], Anderson Puker[9], André C. Morandini[9], André da S. Ferreira[9], André L. Martins[9], André M. Esteves[9], André S. Fernandes[9], André S. Roza[9], Andreas Köhler[9], Andressa Paladini[9], Andrey J. de Andrade[9], Ângelo P. Pinto[9], Anna C. de A. Salles[9], Anne I. Gondim[9], Antonia C.Z. Amaral[9], Antonio A.A. Rondón[9], Antonio Brescovit[9], Antônio C. Lofego[9], Antonio C. Marques[9], Antonio Macedo[9], Artur Andriolo[9], Augusto L. Henriques[9], Augusto L. Ferreira Júnior[9], Aurino F. de Lima[9], Ávyla R. de A. Barros[9], Ayrton do R. Brito[9], Bárbara L.V. Romera[9], Beatriz M.C. de Vasconcelos[9], Benjamin W. Frable[9], Bernardo F. Santos[9], Bernardo R. Ferraz[9], Brunno B. Rosa[9], Brunno H.L. Sampaio[9], Bruno C. Bellini[9], Bruno Clarkson[9], Bruno G. de Oliveira[9], Caio C.D. Corrêa[9], Caleb C. Martins[9], Camila F. de Castro-Guedes[9], Camilla Souto[9], Carla de L. Bicho[9], Carlo M. Cunha[9], Carlos A. de M. Barboza[9], Carlos A.S. de Lucena[9], Carlos Barreto[9], Carlos D.C.M. de Santana[9], Carlos E.Q. Agne[9], Carlos G.C. Mielke[9], Carlos H.S. Caetano[9], Carlos H.W. Flechtmann[9], Carlos J.E. Lamas[9], Carlos Rocha[9], Carolina S. Mascarenhas[9], Cecilia B. Margaría[9], Cecilia Waichert[9], Celina Digiani[9], Célio F.B. Haddad[9], Celso O. Azevedo[9], Cesar J. Benetti[9], Charles M.D. dos Santos[9], Charles R. Bartlett[9], Cibele Bonvicino[9], Cibele S. Ribeiro-Costa[9], Cinthya S.G. Santos[9], Cíntia E.L. Justino[9], Clarissa Canedo[9], Claudia C. Bonecker[9], Cláudia P. Santos[9], Claudio J.B. de Carvalho[9], Clayton C. Gonçalves[9], Cleber Galvão[9], Cleide Costa[9], Cléo D.C. de Oliveira[9], Cristiano F. Schwertner[9], Cristiano L. Andrade[9], Cristiano M. Pereira[9], Cristiano Sampaio[9], Cristina de O. Dias[9], Daercio A. de A. Lucena[9], Daiara Manfio[9], Dalton de S. Amorim[9], Dalva L. de Queiroz[9], Dalva L. de Queiroz[9], Daniara Colpani[9], Daniel Abbate[9], Daniel A. Aquino[9], Daniel Burckhardt[9], Daniel C. Cavallari[9], Daniel de C. Schelesky Prado[9], Daniel L. Praciano[9], Daniel S. Basílio[9], Daniela de C. Benà[9], Daniela G.P. de Toledo[9], Daniela M. Takiya[9], Daniell R.R. Fernandes[9], Danilo C. Ament[9], Danilo P. Cordeiro[9], Darliane E. Silva[9], Darren A. Pollock[9], David B. Muniz[9], David I. Gibson[9], David S. Nogueira[9], Dayse W.A. Marques[9], Débora Lucatelli[9], Deivys M.A. Garcia[9], Délio Baêta[9], Denise N.M. Ferreira[9], Diana Rueda-Ramírez[9], Diego A. Fachin[9], Diego de S. Souza[9], Diego F. Rodrigues[9], Diego G. de Pádua[9], Diego N. Barbosa[9], Diego R. Dolibaina[9], Diogo C. Amaral[9], Donald S. Chandler[9], Douglas H.B. Maccagnan[9], Edilson Caron[9], Edrielly Carvalho[9], Edson A. Adriano[9], Edson F. de Abreu Júnior[9], Edson H.L. Pereira[9], Eduarda F.G. Viegas[9], Eduardo Carneiro[9], Eduardo Colley[9], Eduardo Eizirik[9], Eduardo F. dos Santos[9], Eduardo M. Shimbori[9], Eduardo Suárez-Morales[9], Eliane P. de Arruda[9], Elisandra A. Chiquito[9], Élison F.B. Lima[9], Elizeu B. de Castro[9], Elton Orlandin[9], Elynton A. do Nascimento[9], Emanuel Razzolini[9], Emanuel R.R. Gama[9], Enilma M. de Araujo[9], Eric Y. Nishiyama[9], Erich L. Spiessberger[9], Érika C.L. dos Santos[9], Eugenia F. Contreras[9], Eunice A.B. Galati[9], Evaldo C. de Oliveira Junior[9], Fabiana Gallardo[9], Fabio A. Hernandes[9], Fábio A. Lansac-Tôha[9], Fabio B. Pitombo[9], Fabio Di Dario[9], Fábio L. dos Santos[9], Fabio Mauro[9], Fabio O. do Nascimento[9], Fabio Olmos[9], Fabio R. Amaral[9], Fabio Schunck[9], Fábio S. P. de Godoi[9], Fabrizio M. Machado[9], Fausto E. Barbo[9], Federico A. Agrain[9], Felipe B. Ribeiro[9], Felipe F.F. Moreira[9], Felipe F. Barbosa[9], Fenanda S. Silva[9], Fernanda F. Cavalcanti[9], Fernando C. Straube[9], Fernando Carbayo[9], Fernando Carvalho Filho[9], Fernando C.V. Zanella[9], Fernando de C. Jacinavicius[9], Fernando H.A. Farache[9], Fernando Leivas[9], Fernando M.S. Dias[9], Fernando Mantellato[9], Fernando Z. Vaz-de-Mello[9], Filipe M. Gudin[9], Flávio Albuquerque[9], Flavio B. Molina[9], Flávio D. Passos[9], Floyd W. Shockley[9], Francielly F. Pinheiro[9], Francisco de A.G. de Mello[9], Francisco E. de L. Nascimento[9], Francisco L. Franco[9], Francisco L. de Oliveira[9], Francisco T. de V. Melo[9], Freddy R.B. Quijano[9], Frederico F. Salles[9], Gabriel Biffi[9], Gabriel C. Queiroz[9], Gabriel L. Bizarro[9], Gabriela Hrycyna[9], Gabriela Leviski[9], Gareth S. Powell[9], Geane B. dos Santos[9], Geoffrey E. Morse[9], George Brown[9], George M.T. Mattox[9], Geraldo Zimbrão[9], Gervásio S. Carvalho[9], Gil F.G. Miranda[9], Gilberto J. de Moraes[9], Gilcélia M. Lourido[9], Gilmar P. Neves[9], Gilson R.P. Moreira[9], Giovanna G. Montingelli[9], Giovanni N. Maurício[9], Gláucia Marconato[9], Guilherme E.L. Lopez[9], Guilherme L. da Silva[9], Guilherme Muricy[9], Guilherme R.R. Brito[9], Guilherme S.T. Garbino[9], Gustavo E. Flores[9], Gustavo Graciolli[9], Gustavo S. Libardi[9], Heather C. Proctor[9], Helcio R. Gil-Santana[9], Henrique R. Varella[9], Hermes E. Escalona[9], Hermes J. Schmitz[9], Higor D.D. Rodrigues[9], Hilton de C. Galvão Filho [9], Hingrid Y.S. Quintino[9], Hudson A. Pinto[9], Hugo L. Rainho[9], Igor C. Miyahira[9], Igor de S. Gonçalves[9], Inês X. Martins[9], Irene A. Cardoso[9], Ismael B. de Oliveira[9], Ismael Franz[9], Itanna O. Fernandes[9], Ivan F. Golfetti[9], Ivanklin S. Campos-Filho[9], Ivo de S. Oliveira[9], Jacques H.C. Delabie[9], Jader de Oliveira[9], Jadila S. Prando[9], James L. Patton[9], Jamille de A. Bitencourt[9], Janaina M. Silva[9], Jandir C. Santos[9], Janine O. Arruda[9], Jefferson S. Valderrama[9], Jeronymo Dalapicolla[9], Jéssica P. Oliveira[9], Jiri Hájek[9], João P. Morselli[9], João P. Narita[9], João P.I. Martin[9], Jocélia Grazia[9], Joe McHugh[9], Jorge J. Cherem[9], José A.S. Farias Júnior[9], Jose A.M. Fernandes[9], José F. Pacheco[9], José L.O. Birindelli[9], José

ZOOLOGIA
An International Journal for Zoology

M. Rezende[9], Jose M. Avendaño[9], José M. Barbanti Duarte[9], José R. Inácio Ribeiro[9], José R.M. Mermudes[9], José R. Pujol-Luz[9], Josenilson R. dos Santos[9], Josenir T. Câmara[9], Joyce A. Teixeira[9], Joyce R. do Prado[9], Juan P. Botero[9], Julia C. Almeida[9], Julia Kohler[9], Julia P. Gonçalves[9], Julia S. Beneti[9], Julian P. Donahue[9], Juliana Alvim[9], Juliana C. Almeida[9], Juliana L. Segadilha[9], Juliana M. Wingert[9], Julianna F. Barbosa[9], Juliano Ferrer[9], Juliano F. dos Santos[9], Kamila M.D. Kuabara[9], Karine B. Nascimento[9], Karine Schoeninger[9], Karla M. Campião[9], Karla Soares[9], Kássia Zilch[9], Kim R. Barão[9], Larissa Teixeira[9], Laura D. do N.M. de Sousa[9], Leandro L. Dumas[9], Leandro M. Vieira[9], Leonardo H.G. Azevedo[9], Leonardo S. Carvalho[9], Leonardo S. de Souza[9], Leonardo S.G. Rocha[9], Leopoldo F.O. Bernardi[9], Letícia M. Vieira[9], Liana Johann[9], Lidianne Salvatierra[9], Livia de M. Oliveira[9], Lourdes M.A. El-moor Loureiro[9], Luana B. Barreto[9], Luana M. Barros[9], Lucas Lecci[9], Lucas M. de Camargos[9], Lucas R.C. Lima[9], Lucia M. Almeida[9], Luciana R. Martins[9], Luciane Marinoni[9], Luciano de A. Moura[9], Luciano Lima[9], Luciano N. Naka[9], Lucília S. Miranda[9], Lucy M. Salik[9], Luis E.A. Bezerra[9], Luis F. Silveira[9], Luiz A. Campos[9], Luiz A.S. de Castro[9], Luiz C. Pinho[9], Luiz F.L. Silveira[9], Luiz F.M. Iniesta[9], Luiz F.C. Tencatt[9], Luiz R.L. Simone[9], Luiz R. Malabarba[9], Luiza S. da Cruz[9], Lukas Sekerka[9], Lurdiana D. Barros[9], Luziany Q. Santos[9], Maciej Skoracki[9], Maira A. Correia[9], Manoel A. Uchoa[9], Manuella F.G. Andrade[9], Marcel G. Hermes[9], Marcel S. Miranda[9], Marcel S. de Araújo[9], Marcela L. Monné[9], Marcelo B. Labruna[9], Marcelo D. de Santis[9], Marcelo Duarte[9], Marcelo Knoff[9], Marcelo Nogueira[9], Marcelo R. de Britto[9], Marcelo R.S. de Melo[9], Marcelo R. de Carvalho[9], Marcelo T. Tavares[9], Marcelo V. Kitahara[9], Marcia C.N. Justo[9], Marcia J.C. Botelho[9], Márcia S. Couri[9], Márcio Borges-Martins[9], Márcio Felix[9], Marcio L. de Oliveira[9], Marco A. Bologna[9], Marco S. Gottschalk[9], Marcos D.S. Tavares[9], Marcos G. Lhano[9], Marcus Bevilaqua[9], Marcus T.T. Santos[9], Marcus V. Domingues[9], Maria A.M. Sallum[9], María C. Digiani[9], Maria C.A. Santarém[9], Maria C. do Nascimento[9], María de los A.M. Becerril[9], Maria E.A. dos Santos[9], Maria I. da S. dos Passos[9], Maria L. Felippe-Bauer[9], Mariana A. Cherman[9], Mariana Terossi[9], Marie L.C. Bartz[9], Marina F. de C. Barbosa[9], Marina V. Loeb[9], Mario Cohn-Haft[9], Mario Cupello[9], Marlúcia B. Martins[9], Martin L. Christofersen[9], Matheus Bento[9], Matheus dos S. Rocha[9], Maurício L. Martins[9], Melissa O. Segura[9], Melissa Q. Cardenas[9], Mércia E. Duarte[9], Michael A. Ivie[9], Michael M. Mincarone[9], Michela Borges[9], Miguel A. Monné[9], Mirna M. Casagrande[9], Monica A. Fernandez[9], Mônica Piovesan[9], Naércio A. Menezes[9], Natalia P. Benaim[9], Natália S. Reategui[9], Natan C. Pedro[9], Nathalia H. Pecly[9], Nelson Ferreira Júnior[9], Nelson J. da Silva Júnior[9], Nelson W. Perioto[9], Neusa Hamada[9], Nicolas Degallier[9], Ning L. Chao[9], Noeli J. Ferla[9], Olaf H.H. Mielke[9], Olivia Evangelista[9], Oscar A. Shibatta[9], Otto M.P. Oliveira[9], Pablo C.L. Albornoz[9], Pablo M. Dellapé[9], Pablo R. Gonçalves[9], Paloma H.F. Shimabukuro[9], Paschoal Grossi[9], Patrícia E. da S. Rodrigues[9], Patricia O.V. Lima[9], Paul Velazco[9], Paula B. dos Santos[9], Paula B. Araújo[9], Paula K.R. Silva[9], Paula R. Riccardi[9], Paulo C. de A. Garcia[9], Paulo G.H. Passos[9], Paulo H.C. Corgosinho[9], Paulo Lucinda[9], Paulo M.S. Costa[9], Paulo P. Alves[9], Paulo R. de O. Roth[9], Paulo R.S. Coelho[9], Paulo R.M. Duarte[9], Pedro F. de Carvalho[9], Pedro Gnaspini[9], Pedro G.B. Souza-Dias[9], Pedro M. Linardi[9], Pedro R. Bartholomay[9], Peterson R. Demite[9], Petr Bulirsch[9], Piter K. Boll[9], Rachel M.M. Pereira[9], Rafael A.P.F. Silva[9], Rafael B. de Moura[9], Rafael Boldrini[9], Rafaela A. da Silva[9], Rafaela L. Falaschi[9], Ralf T.S. Cordeiro[9], Ramon J.C.L. Mello[9], Randal A. Singer[9], Ranyse B. Querino[9], Raphael A. Heleodoro[9], Raphael de C. Castilho[9], Reginaldo Constantino[9], Reinaldo C. Guedes[9], Renan Carrenho[9], Renata S. Gomes[9], Renato Gregorin[9], Renato J.P. Machado[9], Renato S. Bérnils[9], Renato S. Capellari[9], Ricardo B. Silva[9], Ricardo Kawada[9], Ricardo M. Dias[9], Ricardo Siewert[9], Ricaro Brugnera[9], Richard A.B. Leschen[9], Robert Constantin[9], Robert Robbins[9], Roberta R. Pinto[9], Roberto E. dos Reis[9], Robson T. da C. Ramos[9], Rodney R. Cavichioli[9], Rodolfo C. de Barros[9], Rodrigo A. Caires[9], Rodrigo B. Salvador[9], Rodrigo C. Marques[9], Rodrigo C. Araújo[9], Rodrigo de O. Araujo[9], Rodrigo de V.P. Dios[9], Rodrigo Johnsson[9], Rodrigo M. Feitosa[9], Roger W. Hutchings[9], Rogéria I.R. Lara[9], Rogério V. Rossi[9], Roland Gerstmeier[9], Ronald Ochoa[9], Rosa S.G. Hutchings[9], Rosaly Ale-Rocha[9], Rosana M. da Rocha[9], Rosana Tidon[9], Rosangela Brito[9], Roseli Pellens[9], Sabrina R. dos Santos[9], Sandra D. dos Santos[9], Sandra V. Paiva[9], Sandro Santos[9], Sarah S. de Oliveira[9], Sávio C. Costa[9], Scott L. Gardner[9], Sebastián A. Muñoz Leal[9], Sergio Aloquio[9], Sergio L.C. Bonecker[9], Sergio L. de S. Bueno[9], Sérgio M. de Almeida[9], Sérgio N. Stampar[9], Sérgio R. Andena[9], Sergio R. Posso[9], Sheila P. Lima[9], Sian de S. Gadelha[9], Silvana C. Thiengo[9], Simone C. Cohen[9], Simone N. Brandão[9], Simone P. Rosa[9], Síria L.B. Ribeiro[9], Sócrates D. Letana[9], Sonia B. dos Santos[9], Sonia C.S. Andrade[9], Stephane Dávila[9], Stéphanie Vaz[9], Stewart B. Peck[9], Susete W. Christo[9], Suzan B.Z. Cunha[9], Suzete R. Gomes[9], Tácio Duarte[9], Taís Madeira-Ott[9], Taísa Marques[9], Talita Roell[9], Tarcilla C. de Lima[9], Tatiana A. Sepulveda[9], Tatiana F. Maria[9], Tatiana P. Ruschel[9], Thaiana Rodrigues[9], Thais A. Marinho[9], Thaís M. de Almeida[9], Thaís P. Miranda[9], Thales R.O. Freitas[9], Thalles P.L. Pereira[9], Thamara Zacca[9], Thaynara L. Pacheco[9], Thiago F. Martins[9], Thiago M. Alvarenga[9], Thiago R. de Carvalho[9], Thiago T.S. Polizei[9], Thomas C. McElrath[9], Thomas Henry[9], Tiago G. Pikart[9], Tiago J. Porto[9], Tiago K. Krolow[9], Tiago P. Carvalho[9], Tito M. da C. Lotufo[9], Ulisses Caramaschi[9], Ulisses dos S. Pinheiro[9], Ulyses F.J. Pardiñas[9], Valéria C. Maia[9], Valeria Tavares[9], Valmir A. Costa[9], Vanessa S. do Amaral[9], Vera C. Silva[9], Vera R. dos S. Wolff[9], Verônica Slobodian[9], Vinícius B. da Silva[9], Vinicius C. Espíndola[9], Vinicius da Costa-Silva[9], Vinicius de A. Bertaco[9], Vinícius Padula[9], Vinicius S. Ferreira[9], Vitor C.P. da Silva[9], Vítor de Q. Piacentini[9], Vivian E. Sandoval-Gómez[9], Vivian Trevine[9], Viviane R. Sousa[9], Vivianne B. de Sant'Anna[9], Wayne N. Mathis[9], Wesley de O. Souza[9], Wesley D. Colombo[9], Wioletta Tomaszewska[9], Wolmar B. Wosiacki[9], Ximena M.C. Ovando[9], Yuri L.R. Leite[9]

[1]*Biological Interactions and Graduate Program in Ecology and Conservation, Universidade Federal do Paraná. Curitiba, PR, Brazil. Conselho Nacional de Desenvolvimento Científico e Tecnológico.*
[2]*Universidade Iguaçu, Nova Iguaçu, and Universidade Santa Úrsula. Rio de Janeiro, RJ, Brazil.*
[3]*Museu de Zoologia, Universidade de São Paulo. São Paulo, SP, Brazil.*
[4]*Instituto Nacional de Pesquisas da Amazônia. Manaus, AM, Brazil.*
[5]*Instituto Chico Mendes de Conservação da Biodiversidade, Jardim Botânico do Rio de Janeiro. Rio de Janeiro, RJ, Brazil.*
[6]*Laboratório de Mamíferos, Departamento de Ciências Biológicas, Escola Superior de Agricultura "Luiz de*

Queiroz", Universidade de São Paulo. Piracicaba, SP, Brazil.
[7]*Setor de Carcinologia, Departamento de Invertebrados, Museu Nacional, Universidade Federal do Rio de Janeiro. Rio de Janeiro, RJ, Brazil.*
[8]*Departamento de Biologia Animal, Universidade Estadual de Campinas. Campinas, SP, Brazil.*
[9]*Further details of each specific author are available here: Boeger W, Valim MP (2024) Brazilian Zoology Group 2023, Brazil. https://doi.org/10.5281/zenodo.10491755*
*Corresponding author: Walter A Boeger (*wboeger@gmail.com*)*

https://zoobank.org/B9FD1175-9E33-403F-B5A4-584F7278A27F

ABSTRACT. The limited temporal completeness and taxonomic accuracy of species lists, made available in a traditional manner in scientific publications, has always represented a problem. These lists are invariably limited to a few taxonomic groups and do not represent up-to-date knowledge of all species and classifications. In this context, the Brazilian megadiverse fauna is no exception, and the Catálogo Taxonômico da Fauna do Brasil (CTFB) (http://fauna.jbrj.gov.br/), made public in 2015, represents a database on biodiversity anchored on a list of valid and expertly recognized scientific names of animals in Brazil. The CTFB is updated in near real time by a team of more than 800 specialists. By January 1, 2024, the CTFB compiled 133,691 nominal species, with 125,138 that were considered valid. Most of the valid species were arthropods (82.3%, with more than 102,000 species) and chordates (7.69%, with over 11,000 species). These taxa were followed by a cluster composed of Mollusca (3,567 species), Platyhelminthes (2,292 species), Annelida (1,833 species), and Nematoda (1,447 species). All remaining groups had less than 1,000 species reported in Brazil, with Cnidaria (831 species), Porifera (628 species), Rotifera (606 species), and Bryozoa (520 species) representing those with more than 500 species. Analysis of the CTFB database can facilitate and direct efforts towards the discovery of new species in Brazil, but it is also fundamental in providing the best available list of valid nominal species to users, including those in science, health, conservation efforts, and any initiative involving animals. The importance of the CTFB is evidenced by the elevated number of citations in the scientific literature in diverse areas of biology, law, anthropology, education, forensic science, and veterinary science, among others.

KEY WORDS. Biodiversity, knowledge management, taxonomy, web services, zoology.

"No name, no information, wrong name, wrong information"
Attributed to Meredith Lane (Botanist) in Brooks, Hoberg, and Boeger (2019)

The biosphere is characterized as a high-level complex network whose attributes represent emergent properties arising from the nature of the interactions between species. The functioning of the biosphere is directly related to the organization of these networks and subnetworks, which determines the degree of resilience of communities subjected to environmental changes, such as the disturbances imposed by humans or resulting from present and future climate changes (Solé and Levin 2022). Therefore, understanding the functioning of a complex system at various levels of biological diversity (e.g., individuals, populations, communities, and ecosystems) depends on our knowledge of the units that make up each of the vertices (or actors) of the network at each level of complexity. The planning of programs and actions for human, animal, and plant health, environmental conservation, and even biotechnological developments requires the knowledge of these actors (Valdecasas and Camacho 2003, Wheeler et al. 2012, Thomson et al. 2018). In biological systems, these actors represent the fundamental elements of the evolutionary process that shape the structure and functioning of communities, ecosystems, and the biosphere (Wheeler et al. 2012). Recognizing the identity and boundaries of the species involved in these interactions is the responsibility of taxonomists. The assignment of names to these entities is governed by rules and conventions (ICNZ 1999). Taxonomists are trained to recognize this fundamental unit of biological systems using traditional methods, such as comparative morphology, or more recent methods, such as geometric morphometry, phylogenetic, phylogeography, and genomics. Species are biological entities that result from

evolutionary changes (heritable information) that have accumulated since the appearance of life on the planet. These accumulated changes not only characterize a species but also its ability to survive environmental challenges (Agosta and Brooks 2020). Today, the planet may host more than 8.5 million species that interact in an extensive network, defining the structure and functioning of the biosphere (Mora et al. 2011).

Species are named according to the rules of nomenclature specific to the group in question, but all originate from the Linnean Binomial System (Linné 1758). The Linnean classification system is hierarchical and was created for the sole purpose of cataloging life on Earth. However, today, the system of classification is strongly centered on the evolutionary relationships of species and therefore carries fundamental informative content for understanding and planning for the maintenance of the biosphere. Thus, the contextualization of the phylogenetic relationships of species at higher hierarchical levels informs about their history, nature, ecology, and ability to resolve conflicts and survive challenges (Agosta and Brooks 2020).

Taxonomy is a living and dynamic science, much more important than many believe, being able to question pre-existing hypotheses (e.g., species delimitation, classification), detect errors, and correct them, thereby increasing the informative content of scientific names and their hierarchical contextualization. Taxonomy is increasingly necessary in the face of challenges associated with the mass extinction of the Anthropocene (Dubois 2003). Precisely because of the dynamic structure of taxonomy and classifications, the reduced temporal completeness and taxonomic accuracy of lists made available in a traditional manner in scientific journals has been a challenge for activities requiring updated information (Conix et al. 2021, Hobern et al. 2021). Furthermore, lists published in scientific journals are static (cross-sectional) and often limited to one or a few better-known taxonomic groups.

Errors in taxonomy, especially those associated with the use of invalid names (e.g., junior synonyms) and incorrect determination of species, may result in mistaken decisions in cascade in their application, which include scientific research, conservation and management programs, assignment of their level of threat, recognition of the native-invasive status, regulations, judicial decisions, among others (Bortolus 2008, Directorate-General for Environment (European Commission) et al. 2022). Hence, the availability of a validated, taxonomically inclusive, and updated species list is of extreme importance to environmental decisions and regional planning. The offer of taxonomic tools in association with the validated species list, such as keys, descriptions, photographs, and illustrations, should increase the ability of users to correctly perform species determination and have access to corresponding information on its biological and distributional data. This is particularly significant in megadiverse countries, such as Brazil, and will soon be implemented in the CTFB.

Paradoxically, worldwide impediments in taxonomy, especially the loss of specialists in diverse groups, pose an immeasurable risk to our ability to understand, describe, and manage nature (Giangrande 2003, Raposo et al. 2021). Besides this and other reasons (Agnarsson and Kuntner 2007), taxonomic impediment seems to associated also with a ruling of the International Code for Zoological Nomenclature, which indicates that the original descriptions of a species do not need to be cited (Agnarsson and Kuntner 2007, Wägele et al. 2011). As a rule, while the species name (and associated authorship) is cited in many studies (sometimes thousands of times), studies containing the original description do not receive similar recognition (Agnarsson and Kuntner 2007). Consequently, in a society dominated by bibliometrics (e.g., impact factor, number of citations) and lack of credit, the science of taxonomy has become unattractive to young researchers with a drastic reduction in the number of taxonomists in various groups. Without a strong taxonomy and dynamic, widely available database of the elements of the biosphere (i.e., species), we cannot adequately intervene environmentally, especially during critical times such as those that follow (Thomson et al. 2018, Vogel Ely et al. 2017, Löbl et al. 2023).

The Catálogo Taxonômico da Fauna do Brasil (CTFB, available at: http://fauna.jbrj.gov.br/) may help mitigate the above-mentioned impediments. The CTFB makes animal biodiversity information fully available to the public, scientists, and decision makers. The Catálogo is an initiative inspired and based on the experience and online system of the Flora e Funga do Brasil, also hosted in Jardim Botânico do Rio de Janeiro (JBRJ). Additionally, the CTFB is one of the key components of the Sistema Brasileiro de Biodiversidade (SiBBr), a project of the Ministério de Ciência, Tecnologia e Inovação (MCTI). The MCTI and the Ministério de Meio Ambiente (MMA) provided initial funding for this initiative, with resources from the Federal Government of Brazil and the Global Environment Fund (GEF). The CTFB, the Flora e Funga do Brasil, and two emerging initiatives – the Lista de Microorganismos do Brasil and the Lista de Fósseis do Brasil – compose the basis for the future Catálogo da Vida

do Brasil (CVB). The CVB will integrate these lists into a single comprehensive system, magnifying the usefulness of the information on the biodiversity of the country.

Annotated lists of species, revised in near-real-time, in association with elements of their distribution, ecology, and nomenclature, represent up-to-date fundamental tools for all professionals involved in studies in biology, medicine, veterinary, agriculture, government, regulations, and biotechnology (Borsch et al. 2020, Brazilian Flora Group 2021). Broad and public access to information about Brazilian biodiversity and ecosystems also contributes to the appreciation of biological diversity in society. The public can search for species that occur in their states or habitats of interest, whereas researchers, students, and consultants can assess the distribution and nomenclature of their work. In addition, managers and decision makers from various institutions, public or private, can use the system as a basis for the application and development of laws and resolutions of governmental institutions. Furthermore, validated species lists such as the CTFB and CVB can provide information on outdated species determination of specimens of museum collections and allow automatic detection and correction of biodiversity databases (e.g., correction of distributional data from secondary species lists such as invasive species). Tools are still required to allow real-time integration among biodiversity databases in Brazil; however, initiatives such as DarwinCoreJson (Pinheiro and Dalcin 2024) are likely to be incorporated into the infrastructure in the near future.

The genesis of the CTFB dates to 2010, with the establishment of SciELO Biodiversity, a project funded by the Fundação de Amparo a Pesquisa do Estado de São Paulo (FAPESP) and led by Hussam Zaher, Director of the Museu de Zoologia da Universidade de São Paulo (MZUSP), and Abel Packer, Director of the Scientific Electronic Library Online (SciELO). The SciELO Biodiversity project was developed within a network formed by the Biodiversity Heritage Library (BHL) and SciELO, originally designed to create a system for managing scientific information sources in biodiversity.

The primary goal of integrating SciELO Biodiversity and CTFB was to provide a novel and robust platform for the development of information and scientific knowledge infrastructure in biodiversity for Brazil. In this context, CTFB is a natural extension of SciELO Biodiversity, offering verified information on the scientific names used in systems dealing with Brazilian biodiversity.

The SciELO Biodiversity Program facilitated the conception of the first version of the biodiversity information network structure, enabling interoperability between species lists and other biodiversity information systems (e.g., GIBIF, SiBBr, Flora, and Funga). This model proposal was presented to a group of 28 experts in the field during the "First Workshop for the Development of the Taxonomic Catalog of Brazilian Fauna Species," held on June 13, 2012, in São Paulo (Fig. 1). This workshop, organized through resources from the SciELO Biodiversity Program, marked the inception of the CTFB and set the foundation for the program's structural framework. A general coordination nucleus was established, comprising Hussam Zaher, José Albertino Rafael, and Walter A. Boeger, representing the major knowledge areas of Vertebrates, Hexapoda, and Non-Hexapoda Invertebrates, respectively. Later, Dr. Rafaela C. Forzza, coordinator of the Flora e Funga do Brasil, joined the coordinating nucleus when the CTFB was incorporated into the biodiversity information infrastructure at Jardim Botânico do Rio de Janeiro (JBRJ) (Ministério do Meio Ambiente (MMA), Brazil) under her charge. The initial CTFB group also included other participants from the First Workshop as Coordinators of the Major Animal Groups addressed in the Catalogue.

Other meetings of the organizing group followed, including two organizational meetings. One, that occurred in Rio de Janeiro, at the JBRJ in September 11, 2013 with representatives of the Ministério do Meio Ambiente (MMA), Ministério da Ciência e Tecnologia e Inovação Tecnológica (MCTI), Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio) and JBRJ. The second one, in Brasília from May 12 to 14, 2015 (Fig. 2), was organized with 36 taxa coordinators to discuss the final preparations for the launch of the online system. These preparations included the definition of the team of specialists and coordinators for each major taxon, deadlines, and goals. Initially, the goal of the project was to compile a list of valid species names of animals to be completed by the public launching of the CTFB. After this meeting, since June 2015, Michel P. Valim joined the coordination committee, bringing his expertise from the taxa he coordinated (insects and mites ectoparasites) to help with other biological groups, and serving as a liaison with the IT team to solve problems with the platform, moving the project forward. On December 21, 2015, in Brasília, a public search site was launched. At the time of launch, the database consisted of more than 116 thousand validated names of animals occurring in Brazil, and introduced and domesticated species were not accounted for.

Due to limited funding for improvements and assistantships, CTFB is mostly supported by voluntary work by taxonomists. It is this group of scientists that maintains

Figure 1. Participants of the First Workshop for the Development of the Catálogo Taxonômico da Fauna do Brasil, held on June 13th, 2012, in São Paulo. Numbers on the photograph refer to the zoologists and collaborators present in the meeting. 1. Mariana Galera; 2. Marcelo Roberto de Souto Melo; 3. Cristiano de Campos Nogueira; 4. Giuseppe Puorto; 5. João Paulo Pena Barbosa; 6. Renato Silveira Bérnils; 7. Marcelo Duarte; 8. Abel Packer; 9. Magno Vicente Segalla; 10. Rafaela C. Forzza; 11. Marcela Laura Monné Freire; 12. Alexandre Reis Percequillo; 13. Simone C. Cohen; 14. Luiz Ricardo Lopes de Simone; 15. Rodney R. Cavichiolli; 16. Carlos José Einicker Lamas; 17. Hussam El Dine Zaher; 18. Walter A. Boeger; 19. Adriano Brilhante Kury; 20. Cristiana S. Serejo; 21. José Eugênio Grillo; 22. Marcos Domingos Siqueira Tavares; 23. Renato Gregorin.

lists of specific taxa under their responsibility. Presently, the management design for the CTFB is organized by coordinators of large groups (i.e., Chordata, Invertebrates except for Arthropoda, Hexapoda, and Arthropoda, except for Hexapoda), each managing sub-coordinators of subordinated taxa. These latter coordinate all authors of specific taxa. In general, this management system has been effective in providing an effective and rapid update of the taxonomic and ecological information on most major taxa, with few exceptions. All contributing taxonomists (more than 800 at this time (see Boeger and Valim 2024) have been invited at some point, according to the demand, but the CTFB is open to all specialists in different groups of animals interested in collaboration. The CTFB is strongly based on the community efforts of scientists who recognize the importance of an updated species list of the fauna of Brazil.

The CTFB is licensed under the CC (https://creativecommons.org/licenses/by/4.0). The system comprises a public consulting page (http://fauna.jbrj.gov.br/) and a workspace area for associated specialists. Searches can be performed on the public consulting page with a combination of keywords, varying from taxonomy, biology, and distribution. In contrast, the workspace provides administrative and database resources for coordinators and taxonomists. Furthermore, the complete database of the CTFB is also provided through the IPT (Integrated Publishing Toolkit; https://ipt.jbrj.gov.br/jbrj/resource?r=catalogo_taxonomico_da_fauna_do_brasil). The data retrieved from the public consultation page reflect the real-time data available in the CTFB. The data provided by the IPT are updated monthly and presented in the Darwin Core format (Wieczorek et al. 2012).

The inclusion of a species name in the CTFB is preferably based on the following criteria: (1) type specimens whose type locality is in Brazil; (2) data from literature and scientific collections (e.g., indexed scientific publications, testimonial material in scientific collections; genetic identity based on sequences deposited in an online database); and 3) other types of records (e.g., photographs, slides, and non-indexed publications) at the discretion of the coordinator and the team of specialists.

Figure 2. Group photo of CTFB coordinators involved in the meeting from 12th to 14th on May 2015 in Brasília, Brazil, at the Ministério de Meio Ambiente (MMA). Numbers on the photograph refer to the zoologists and collaborators present in the meeting. 1. Adriano Brilhante Kury; 2. Martin Lindsey Christoffersen; 3. Renato Silveira Bérnils; 4. Wolmar Benjamim Wosiacki; 5. Michel P. Valim; 6. Luis Fábio Silveira; 7. Élison Fabricio Bezerra Lima; 8. Ângelo Parisi Pinto; 9. Jocélia Grazia; 10. André Esteves; 11. Keila Elizabeth Mafadem Juarez; 12. Guilherme Muricy; 13. Leandro Manzoni Vieira; 14. Fernando Carbayo; 15. Otto Müller P. Oliveira; 16. Naércio Aquino Menezes; 17. Magno Vicente Segalla; 18. Hussam El Dine Zaher; 19. Alexandre Reis Percequillo; 20. Marcelo Roberto de Souto Melo; 21. Walter A. Boeger; 22. Cristiana S. Serejo; 23. Marcela Laura Monné Freire; 24. Frederico Falcão Salles; 25. Simone C. Cohen; 26. Mirna Martins Casagrande; 27. Antonio Arnovis Agudelo Rondôn; 28. Reginaldo Constantino; 29. Daniela Maeda Takiya; 30. Fernando Zagury Vaz-de-Mello; 31. José Albertino Rafael; 32. Márcio Luiz de Oliveira; 33. Cleide Costa; 34. Douglas Zepellini Filho; 35. Marcos Gonçalves Lhano; 36. Renato Gregorin; 37. Allan Paulo Moreira dos Santos.

Since 2015, additional data inputted by the zoologists involved in the CTFB has resulted not only in the increase in the number of validated species of animals in Brazil but also in additional nomenclatural (e.g., synonyms), ecological, and distributional data. A synthesis of the current species richness of many taxonomic groups of Brazilian fauna is presented herein and in associated articles in this new section of Zoologia, focusing on subordinate groups.

The database analyzed herein was extracted on January 1, 2024, though the IPT-GBIF (Integrated Publishing Toolkit, Brazilian Zoology Group 2023). The taxa used herein do not necessarily reflect recent changes in animal classification (e.g., Acanthocephala is presently considered a member of Rotifera or Syndermata – Dunn et al. 2014, Sielaff et al. 2016; Sipuncula and Echiura are considered members of Annelida – Struck et al. 2007). The list includes mostly native species with only a limited number of introduced, invasive, or domesticated species. Manipulation of the database was processed in R (R Core Team 2021) using RStudio (RStudio Team 2020).

By January 1, 2024, the CTFB compiled 133,691 nominal species, with 125,138 considered valid (Table 1). Most of the valid species are arthropods (82.3% with more than 102,000 species) and chordates (7.69% with over 11,000 species). These taxa are followed by a cluster composed of Mollusca (3,567 species), Platyhelminthes (2,292 species), Annelida (1,833 species), and Nematoda (1,447 species). All remaining groups have less than 1,000 species reported in Brazil, with Cnidaria (831 species), Porifera (628 species),

Table 1. Number of known valid nominal species in Brazil according to the Catálogo Taxonômico da Fauna do Brasil (CTFB) followed by the approximate percentage of increase (+) or decrease (–) from the estimations of Lewinsohn and Prado (2015) (third column), and estimated known number of species in the world by Chapman (2009).

Taxon	CTFB (until January 1st, 2024)	Brazil (Lewinsohn and Prado 2005)	World (Chapman 2009)
Acanthocephala	71 (+42%)	30–50	1,150
Acoelomorpha	33	–	–
Annelida	1,833 (+67%)	1,000–1,100	17,763
Arthropoda	102,931 (-13%)	88,790–118,290	1,141,139
Brachiopoda	3 (-25%)	4	~350
Bryozoa	520 (+83%)	284	–
Chaetognatha	25 (+39%)	18	~70
Chordata	9,617 (+34%)	7,120–7,150	64,788
Cnidaria	831(+76%)	470	9,795
Ctenophora	14 (+600%)	2	~100
Echinodermata	348 (+6%)	329	7,003
Echiura	7 (-22%)	9	~140
Entoprocta	17 (+70%)	10	~150
Gastrotricha	87 (+26%)	69	~400
Kinorhyncha	5 (+400%)	1	~150
Loricifera	1	0	~100
Mollusca	3,567 (+19%)	2,400–3,000	~85,000
Nematoda	1,447 (-50%)	1,280–2,880	Up to 25,000
Nematomorpha	16 (+33%)	12	~240
Nemertea	39 (-0.9%)	43	~900
Onychophora	23 (+475%)	4	165
Pentastomida	17	–	~130
Phoronida	4 (+100%)	2	16
Placozoa	1	0	1
Platyhelminthes	2,292 (-0.3%)	1,040–2,300	20,000
Porifera	628 (+57%)	300–400	~6,000
Priapulida	1	1	17
Rotifera	606 (+33%)	457	~2,000
Sipuncula	39 (+30%)	30	–
Tardigrada	95 (+42%)	67	~750
Total	125,138		

Rotifera (606 species), and Bryozoa (520 species), representing those with more than 500 species.

Uncovering the global and regional richness of animal species is not a simple task. Taxonomists have described new entities they call species, and have arranged them into meaningful classifications for more than 250 years worldwide. However, except for those groups that are more attractive to scientists (aesthetically, ecologically, or economically), we are far from revealing a significant portion of the global biodiversity. Hence, efforts to discover species that are yet unknown to science have been greatly asymmetric over time, geography, and taxonomic groups.

The resulting list of each taxonomic group of animal species in Brazil, assembled at the CTFB, is no exception. In general, the number of species registered in the CTFB is higher than previous estimates of known species, such as those provided by Lewinsohn and Prado (2005) (Table 1) – except for Arthropoda, Echiura, Nematoda, Nemertea, and Platyhelminthes. This difference reflects descriptions published from 2005 (date of publication of Lewinsohn and Prado 2005) onward as well as the efforts of the CTFB team in recovering all records of species in the literature. This literature review led many groups (megadiverse or not) to compile their diversity in Brazil for the first time.

The systematic update of the list of valid species within the CTFB is an exceptional opportunity to continuously evaluate estimations of species richness in Brazil.

For instance, analyses of species richness and distribution among states strongly suggest that our knowledge of the biodiversity of the country is still limited, except for most groups of Chordata. This poses a major problem as discussed by (Costello et al. 2013): "Can we describe all species before they become extinct?"

Analysis of the CTFB database can facilitate and guide efforts towards the discovery of new species in Brazil, but it is also fundamental in providing the best-available list of valid species to users, including those in science, health, conservation efforts, biotechnology, agricultural sciences, and any other initiative involving animal species. Current efforts in these areas are based on incomplete and non-validated biodiversity catalogues (Mora et al. 2011). The agility of a continuously validated taxonomic list (and the corresponding information) is fundamental for providing important data on species identity for either species-based or community-based initiatives (Ely et al. 2017). Changes in the classification and delimitation of species can be rapidly implemented in the CTFB, which may immediately induce improvements in research, red lists, legislation, and conservation efforts for the involved species (Feijó and Brandão 2022). This is especially significant considering that modern taxonomy is heavily rooted in evolution and phylogeny, and that a name carries more information than just an identity (Wheeler et al. 2012, Brooks et al. 2019).

A rapid search of the literature emphasizes the importance of the CTFB in many of the previously mentioned areas. The CTFB has been cited approximately 960 times since 2015, according to Google Scholar (accessed on November 23, 2023), in scientific papers and theses in diverse areas of biology and others. For instance, the CTFB has supported the discovery of new animal taxa and inventories (Victorino et al. 2023, Zatti et al. 2023), and taxonomic reviews including the articles in this journal section.

Examples of the importance if the CTFB in revealing the richness of species of the Brazilian fauna are the present knowledge on Mollusca and Diptera (Hexapoda). The integrated and collaborative efforts of specialists within the CTFB increased by approximately 40% of species in Mollusca (Machado et al. 2023) and almost 50% in the number of valid species of Diptera reported by the specialized publications of "A catalogue of the Diptera of the Americas South of the United States" (e.g., Secretaria da Agricultura do Estado do São Paulo 1966, Pont 1974, Wirth 1974, and others). Furthermore, CTFB has supported studies on taxonomy (Santos et al. 2020) and phylogeny (Biffi et al. 2022, Schuster and Machado 2023), ecology (Pompeo et al. 2023), phylogeography (Nunes Freire Lima 2023), biogeography (Dias 2020), interactions (dos Santos Azevedo et al. 2018, Carvalho 2020, da Silva Biz et al. 2022), invasive species (Santos 2023b), and conservation (Correa et al. 2019, Bustamante et al. 2023). The amplitude of interest in the CTFB has also been observed in studies on anthropology (Santos et al. 2023a, pest control (Pantoja et al. 2023), education (Santana et al. 2023), forensic science (Silva et al. 2023), health (Feijó Almeida 2023), pest management (Torrez 2022), law (de Santana Silva et al. 2022, Jaruche Neto 2021), and architecture (Junqueira and Sucena 2021). Furthermore, the CTFB is an open and efficient tool in Brazil that provides curated and validated information to many additional biodiversity systems, such as the SiBBr (https://www.sibbr.gov.br/) and the Global Biodiversity Information Facility (GBIF) (https://www.gbif.org/).

Until this series of published papers within the newly dedicated section of Zoologia, only three publications analyzed the complete database of particular animal groups derived from the CTFB in assorted journals (Santos et al. 2020, Duarte and Lecci 2023, Machado and Martins 2023). Submission of manuscripts based on the database on animal diversity provided by the CTFB is welcome and encouraged.

ACKNOWLEDGMENTS

I would like to express our gratitude to all the specialists and coordinators who, despite their valuable contributions to the CTFB, have chosen not to be included as co-authors in this article. Financial or technical support was provided by the Ministério de Meio Ambiente, Ministério de Ciência, Tecnologia e Inovação, the Jardim Botânico do Rio de Janeiro, Scielo Brazil. Special thanks go to in Abel Packer, Eduardo Dalcin (JBRJ), and the IT team of COPPETEC/UFRJ.

LITERATURE CITED

Agnarsson I, Kuntner M (2007) Taxonomy in a Changing World: Seeking Solutions for a Science in Crisis. Systematic Biology 56: 531–539. https://doi.org/10.1080/10635150701424546

Agosta SJ, Brooks DR (2020) The Major Metaphors of Evolution: Darwinism Then and Now (2). Springer International Publishing, Cham. https://doi.org/10.1007/978-3-030-52086-1

Biffi G, Leschen RA, Hsiao Y, Daniel GM, Casari SA (2022) The systematics of Dysmorphocerinae (Cantharidae) based on larvae. Insect Systematics & Evolution 54: 312–347. https://doi.org/10.1163/1876312X-bja10041

Boeger W, Valim MP (2024) Brazilian Zoology Group 2023. https://doi.org/10.5281/zenodo.10491755

Borsch T, Berendsohn W, Dalcin E, Delmas M, Demissew S, Elliott A, et al. (2020) World Flora Online: Placing taxonomists at the heart of a definitive and comprehensive global resource on the world's plants. Taxon 69(6): 1311–1341. https://doi.org/10.1002/tax.12373

Bortolus A (2008) Error cascades in the biological sciences: the unwanted consequences of using bad taxonomy in ecology. AMBIO: A Journal of the Human Environment 37: 114–118. https://doi.org/10.1579/0044-7447(2008)37[114:ECITBS]2.0.CO;2

Brazilian Flora Group (2022) Brazilian Flora 2020: Leveraging the power of a collaborative scientific network. Taxon 71(1): 178–198. https://doi.org/10.1002/tax.12640

Brazilian Zoology Group (2024) Catálogo Taxonômico da Fauna do Brasil. Version 1.9. https://doi.org/10.15468/c4cauy

Brooks DR, Hoberg EP, Boeger WA (2019) The Stockholm Paradigm: Climate Change and Emerging Disease. University of Chicago Press, Chicago, 400 pp.

Bustamante MM, Calaça FJS, Pompermaier VT, da Silva MRSS, Silveira R (2023) Effects of land use changes on soil biodiversity conservation. In: Sustainability Challenges of Brazilian Agriculture: Governance, Inclusion, and Innovation. Springer, 125–143.

Carvalho APC (2020) Reconhecimento e teste de preferência de plantas hospedeiras de *Omophoita octoguttata* (Fabricius, 1775) (Chrysomelidae, Galerucinae, Alticini). Universidade Federal da Fronteira Sul, Licenciatura em Ciências Biológicas, Realeza, 25 pp.

Chapman AD (2009) Numbers of Living Species in Australia and the World. Department of the Environment, Walter, Heritage and the Arts, Canberra, 82 pp.

Conix S, Garnett ST, Thiele KR, Christidis L, van Dijk PP, Bánki OS, et al. (2021) Towards a global list of accepted species III. Independence and stakeholder inclusion. Organisms Diversity & Evolution 21: 631–643. https://doi.org/10.1007/s13127-021-00496-x

Correa CM, Puker A, Lara MA, Rosa CS, Korasaki V (2019) Importance of urban parks in conserving biodiversity of flower chafer beetles (Coleoptera: Scarabaeoidea: Cetoniinae) in Brazilian Cerrado. Environmental Entomology 48: 97–104. https://doi.org/10.1093/ee/nvy176

Costello MJ, May RM, Stork NE (2013) Can we name earth's species before they go extinct? Science 339: 413–416. https://doi.org/10.1126/science.1230318

da Silva Biz L, Cascaes MF, Luciano BFL, Preuss G, Bôlla DAS, Graciolli G, Carvalho F (2022) Parasitic interactions between bats (Mammalia: Chiroptera) and flies (Insecta: Diptera) in the intersection area of temperate and tropical climates in Brazil. Studies on Neotropical Fauna and Environment 57: 291–300. https://doi.org/10.1080/01650521.2020.1869490

de Santana Silva D, Marques MM, Cerewuta PMM (2022) Posse Ilegal de Animais Silvestres no Brasil. Facit Business and Technology Journal 2: 98–114.

Dias ES (2020) Systematic and biogeography of Leptoceridae (Trichoptera) with review of *Achoropsyche* Holzenthal, 1984. PhD Thesis, Universidade de São Paulo, Ribeirão Preto, 107 pp. https://www.teses.usp.br/teses/disponiveis/59/59131/tde-17062021-185152/publico/tese.pdf

Directorate-General for Environment (European Commission), Hochkirch A, Casino A, Penev L, Allen D, Tilley L, Georgiev T, Gospodinov K, Barov B (2022) European Red List of insect taxonomists. Publications Office of the European Union. https://data.europa.eu/doi/10.2779/364246 [Accessed: 01/03/2024]

dos Santos Azevedo W, Abegg AD, De França DPF (2018) Predator-prey interaction between the snakes *Apostolepis ammodites* and *Psomophis joberti* (Snakes: Dipsadidae). Herpetology Notes 11: 263–265.

Duarte T, Lecci LS (2023) A scientometric approach to the taxonomy of Brazilian Plecoptera: An overview of data. Revista Brasileira de Entomologia 67: e20230056. https://doi.org/10.1590/1806-9665-rbent-2023-0056

Dubois A (2003) The relationships between taxonomy and conservation biology in the century of extinctions. Comptes Rendus Biologies 326: 9–21. https://doi.org/10.1016/S1631-0691(03)00022-2

Dunn CW, Giribet G, Edgecombe GD, Hejnol A (2014) Animal phylogeny and its evolutionary implications. Annual Review of Ecology, Evolution, and Systematics 45: 371–395. https://doi.org/10.1146/annurev-ecolsys-120213-091627

Feijó A, Brandão MV (2022) Taxonomy as the first step towards conservation: an appraisal on the taxonomy of medium- and large-sized Neotropical mammals in the 21st century. Zoologia 39: e22007. https://doi.org/10.1590/s1984-4689.v39.e22007

Feijó Almeida J (2023) Bioecologia de mosquitos (Diptera: Culicidae) e infecções verticais de arbovírus, em uma agrovila na Amazônia brasileira. PhD Thesis, Instituto

Nacional de Pesquisas da Amazônia, Manaus, 85 pp. https://repositorio.inpa.gov.br/handle/1/39669

Giangrande A (2003) Biodiversity, conservation, and the 'Taxonomic impediment'. Aquatic Conservation: Marine and Freshwater Ecosystems 13: 451–459. https://doi.org/10.1002/aqc.584

Hobern D, Barik SK, Christidis L, Garnett ST, Kirk P, Orrell TM, et al. (2021) Towards a global list of accepted species VI: The Catalogue of Life checklist. Organisms Diversity & Evolution 21: 677–690. https://doi.org/10.1007/s13127-021-00516-w

ICNZ (1999) International Code of Zoological Nomenclature. International Commission on Zoological Nomenclature, London, 4th ed., 344 pp.

Jaruche Neto A (2021) O tráfico de animais no Brasil: implicações jurídicas e obrigatoriedade da proteção ambiental. Universidade Presbiteriana Mackenzie, São Paulo, 85 pp. https://dspace.mackenzie.br/items/fbfe112e-3f9e--4593-994b-60e3bc1c7dac

Junqueira MEB, Sucena F (2021) Centro de Tratamento a Animais Silvestres. Centro Universitário de Várzea Grande Faculdade de Arquitetura e Urbanismo, Varzea Grande, 65 pp. https://www.repositoriodigital.univag.com.br/index.php/arquit/article/download/707/697

Lewinsohn TM, Prado PI (2005) How many species are there in Brazil? Conservation Biology 19: 619–624. https://doi.org/10.1111/j.1523-1739.2005.00680.x

Linné C von (1758) Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Editio decima, reformata. G.E. Beer, Stockholm, 824 pp.

Löbl I, Klausnitzer B, Hartmann M, Krell F-T (2023) The Silent Extinction of Species and Taxonomists – An appeal to science policymakers and legislators. Diversity 15: 1053. https://doi.org/10.3390/d15101053

Machado FM, Miranda MS, Salvador RB, Pimenta AD, Côrtes MO, Gomes JAJ, et al. (2023) How many species of Mollusca are there in Brazil? A collective taxonomic effort to reveal this still unknown diversity. Zoologia 40: e23026 https://doi.org/10.1590/S1984-4689.v40.e23026

Machado RJP, Martins CC (2023) The extant fauna of Neuroptera (Insecta) from Brazil: diversity, distribution and history. Revista Brasileira de Entomologia 66: e20220083. https://doi.org/10.1590/1806-9665-RBENT-2022-0083

Mora C, Tittensor DP, Adl S, Simpson AGB, Worm B (2011) How Many Species Are There on Earth and in the Ocean? Plos Biology 9: e1001127. https://doi.org/10.1371/journal.pbio.1001127

Nunes Freire Lima ILM (2023) Filogeografia da espécie *Subulo gouazoubira* (Mammalia: Cervidae) na Caatinga. Faculdade de Ciências Agrárias e Veterinárias, Unesp, Jaboticabal, 126 pp. https://repositorio.unesp.br/items/4564572e-616d-4bc9-9aaf-1af237a7a661

Pantoja KRP, Menezes EGO, de Oliveira DG, Pinheiro JML, Bezerra VMS, de Azevedo FFM, de Carvalho Júnior RN (2023) Bioactive phenolic compounds and biological activities of Mururé Bark (*Brosimum acutifolium*), a natural antioxidant. In: Functional Food – Upgrading natural and synthetic sources. IntechOpen, Rijeka. https://www.intechopen.com/online-first/87873

Pinheiro H, Dalcin E (2024) edalcin/DarwinCoreJSON: segundo release para o Zenodo. https://doi.org/10.5281/zenodo.10782707

Pompeo PN, Oliveira Filho LCI, Alexandre D, Lovatel AC, da Silva PM, Sousa JP, et al. (2023) How does the subtropical landscape configuration influence the ecomorphological traits and community composition of ground-dwelling beetles in southern Brazil? Applied Soil Ecology 189: 104949. https://doi.org/10.1016/j.apsoil.2023.104949

Pont AC (1974) A catalogue of the Diptera of the Americas south of the United States. Family Anthomyiidae. A catalogue of the Diptera of the Americas south of the United States. Family Anthomyiidae. Available from: https://www.cabdirect.org/cabdirect/abstract/19740517405 [Accessed: 18/12/2023]

R Core Team (2021) R: A language and environment for statistical computing. Available from: https://www.R-project.org

Raposo MA, Kirwan GM, Lourenço ACC, Sobral G, Bockmann FA, Stopiglia R (2021) On the notions of taxonomic 'impediment', 'gap', 'inflation' and 'anarchy', and their effects on the field of conservation. Systematics and Biodiversity 19: 296–311. https://doi.org/10.1080/14772000.2020.1829157

RStudio Team (2020) RStudio: Integrated development for R. http://www.rstudio.com

Santana CMB, dos Santos Calegari A, Carvalho GS, Soares JPR, de Almeida EAE, Jorge J, Franzolin F (2023) Local biodiversity: students' interests and perceptions, and teaching materials. International Journal of Science Education: 1–20. https://doi.org/10.1080/09500693.2023.2263916

Santos APM, Dumas LL, Henriques-Oliveira AL, Souza WRM, Camargos LM, Calor AR, Pes AMO (2020) Taxonomic Catalog of the Brazilian Fauna: order Trichop-

tera (Insecta), diversity and distribution. Zoologia 37: e46392. https://doi.org/10.3897/zoologia.37.e46392

Santos SS (2023a) Uso de animais pelas populações tradicionais: um panorama da Etnozoologia no Brasil. Universidade Federal da Paraíba, João Pessoa, 146 pp. https://repositorio.ufpb.br/jspui/handle/123456789/26716

Santos TG (2023b) Flutuação sazonal da mosca invasora *Drosophila nasuta* (Diptera, Drosophilidae) na Floresta Atlântica do Rio de Janeiro, Brasil. B.S. thesis, Universidade Federal de Pernambuco, 29 pp. https://repositorio.ufpe.br/handle/123456789/49872

Schuster PA, Machado RJP (2023) Insights on the evolution of Ululodini (Insecta: Neuroptera: Myrmeleontidae: Ascalaphinae), focusing on the systematics of the genus *Ascalorphne* Banks, 1915. Revista Brasileira de Entomologia 66: e20220070. https://doi.org/10.1590/1806-9665-RBENT-2022-0070

Secretaria da Agricultura do Estado do São Paulo (1966) Catalogue of the Diptera of the Americas South of United. Departamento de Zoologia, Secretaria da Agricultura, São Paulo, 843 pp. https://doi.org/10.5962/bhl.title.110114

Sielaff M, Schmidt H, Struck TH, Rosenkranz D, Mark Welch DB, Hankeln T, Herlyn H (2016) Phylogeny of Syndermata (syn. Rotifera): Mitochondrial gene order verifies epizoic Seisonidea as sister to endoparasitic Acanthocephala within monophyletic Hemirotifera. Molecular Phylogenetics and Evolution 96: 79–92. https://doi.org/10.1016/j.ympev.2015.11.017

Silva JOA, Brasil LS, Carvalho-Filho FS (2023) Flesh flies (Diptera: Sarcophagidae) of forensic importance collected from pig carcasses in the Cerrado of Northeastern Brazil. Journal of Medical Entomology 60: 272–281. https://doi.org/10.1093/jme/tjad003

Solé R, Levin S (2022) Ecological complexity and the biosphere: the next 30 years. Philosophical Transactions of the Royal Society B: Biological Sciences 377: 20210376. https://doi.org/10.1098/rstb.2021.0376

Struck TH, Schult N, Kusen T, Hickman E, Bleidorn C, McHugh D, Halanych KM (2007) Annelid phylogeny and the status of Sipuncula and Echiura. BMC Evolutionary Biology 7: 57. https://doi.org/10.1186/1471-2148-7-57

Thomson SA, Pyle RL, Ahyong ST, Alonso-Zarazaga M, Ammirati J, Araya JF, et al. (2018) Taxonomy based on science is necessary for global conservation. Plos Biology 16: e2005075. https://doi.org/10.1371/journal.pbio.2005075

Torrez AAA (2022) Avaliação da predação de sementes de *Aniba rosaeodora* Ducke e estratégias para o manejo integrado de pragas em viveiros, Manaus, Amazonas, Brasil. Instituto Nacional de Pesquisas da Amazônia, Manaus, 111 pp. https://repositorio.inpa.gov.br/handle/1/38747

Valdecasas AG, Camacho AI (2003) Conservation to the rescue of taxonomy. Biodiversity & Conservation 12: 1113–1117. https://doi.org/10.1023/A:1023082606162

Victorino BI, Penteado-Dias AM, Dias Filho MM (2023) New species and new records of Ichneumonidae (Hymenoptera) in Southeast Brazil. Brazilian Journal of Biology 83: e266746. Available from: https://www.scielo.br/j/bjb/a/qqY6zPBNYhyfBfsjtN9m7Rj/?lang=en

Vogel Ely C, Bordignon SAL, Trevisan R, Boldrini II (2017) Implications of poor taxonomy in conservation. Journal for Nature Conservation 36: 10–13. https://doi.org/10.1016/j.jnc.2017.01.003

Wägele H, Klussmann-Kolb A, Kuhlmann M, Haszprunar G, Lindberg D, Koch A, Wägele JW (2011) The taxonomist – an endangered race. A practical proposal for its survival. Frontiers in Zoology 8: 25. https://doi.org/10.1186/1742-9994-8-25

Wheeler QD, Knapp S, Stevenson DW, Stevenson J, Blum SD, Boom BM, et al. (2012) Mapping the biosphere: exploring species to understand the origin, organization and sustainability of biodiversity. Systematics and Biodiversity 10: 1–20. https://doi.org/10.1080/14772000.2012.665095

Wieczorek J, Bloom D, Guralnick R, Blum S, Döring M, Giovanni R, et al. (2012) Darwin Core: An Evolving Community-Developed Biodiversity Data Standard. Plos One 7: e29715. https://doi.org/10.1371/journal.pone.0029715

Wirth WW (1974) A catalogue of the Diptera of the Americas south of the United States. 14. Family Ceratopogonidae. Museu Zoologia, Universidade de São Paulo, 89 pp.

Zatti SA, Araújo BL, Adriano EA, Maia AA (2023) A new freshwater *Ceratomyxa* species (Myxozoa: Ceratomyxidae) parasitizing a sciaenid fish from the Amazon Basin, Brazil. Parasitology International 97: 102796. https://doi.org/10.1016/j.actatropica.2017.02.006

Submitted: January 18, 2024
Accepted: July 22, 2024
Editorial responsibility: Anderson Feijó

Author Contributions

WAB and MPV designed the study, analyzed the data, organized, and wrote the manuscript; HZ wrote the historical portion and revised the manuscript; JAR, RCF, ARP, CSS revised the manuscript. All the above authors have coordinated the teams of various major

groups of animals. These and the remaining authors are members of the Brazilian Zoology Group 2023, which was responsible for entering and validating classification and species names, also providing a review of the many versions of the manuscript.

Competing Interests
The authors have declared that no competing interests exist.

How to cite this article
Boeger WA, Valim MP, Zaher H, Rafael JA, Forzza RC, Percequillo AR, Serejo CS, et al. (2024) Catálogo Taxonômico da Fauna do Brasil: setting the baseline knowledge on the animal diversity in Brazil. Zoologia 41: e24005. https://doi.org/10.1590/S1984-4689.v41.e24005

Published by
Sociedade Brasileira de Zoologia at Scientific Electronic Library Online (https://www.scielo.br/zool)