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A new species of *Eclipta* Bates, 1873 from Brazil (Coleoptera, Cerambycidae) in honor of the late Ubirajara Ribeiro Martins de Souza

Larry G. Bezark[1]
Juan Pablo Botero[2]
Maria Helena M. Galileo[3]
Steven W. Lingafelter[4]
Marcela L. Monné[5]
Miguel A. Monné[6]
Roy F. Morris, II[7]
Dilma Solange Napp[8]
Eugenio H. Nearns[9]
Antonio Santos-Silva[10]
Frederick W. Skillman Jr.[11]
Gérard L. Tavakilian[12]
Michael C. Thomas[13]
James E. Wappes[14]

ABSTRACT

A new species of Eclipta *Bates, 1873 from Brazil (São Paulo),* E. birai, *is described and illustrated. A tribute to the late Ubirajara Ribeiro Martins de Souza is provided.*

Key-Words: Cerambycinae; Rhinotragini; South America; Taxonomy.

1. 521 46th Street, Sacramento, California, 95819, U.S.A. E-mail: LarryBezark@netscape.com
2. Universidade Federal do Rio de Janeiro (UFRJ), Museu Nacional, Departamento de Entomologia. Quinta da Boa Vista, São Cristóvão, CEP 20940-040, Rio de Janeiro, RJ, Brasil. E-mail: jp_bot@yahoo.com
3. Universidade Federal do Rio Grande do Sul (UFRGS), Departamento de Zoologia, Programa de Pós-Graduação em Biologia Animal. Avenida Bento Gonçalves, 9.500, Agronomia, CEP 91501-970, Porto Alegre, RS, Brasil. Bolsista do CNPq. E-mail: galileomh@yahoo.com
4. Systematic Entomology Laboratory, Plant Sciences Institute, Agriculture Research Service, U.S. Department of Agriculture, National Museum of Natural History, Washington, D.C. 20013-7012, U.S.A. E-mail: steve.lingafelter@ars.usda.gov
5. Universidade Federal do Rio de Janeiro (UFRJ), Museu Nacional, Departamento de Entomologia. Quinta da Boa Vista, São Cristóvão, CEP 20940-040, Rio de Janeiro, RJ, Brasil. E-mail: mlmonne2@gmail.com
6. Universidade Federal do Rio de Janeiro (UFRJ), Museu Nacional. Quinta da Boa Vista, São Cristóvão, CEP 20940-040, Rio de Janeiro, RJ, Brasil. E-mail: monne@uol.com.br
7. 2635 Ewell Road Lakeland, Florida, 33811, U.S.A. E-mail: beetlesandbirds@gmail.com
8. Porto Alegre, RS, Brazil. E-mail: solangenapp@uol.com.br
9. Purdue Entomological Research Collection, Department of Entomology, Purdue University, B28 Smith Hall, 901 W. State Street, West Lafayette, Indiana, 47907, U.S.A. E-mail: enearns@purdue.edu
10. Museu de Zoologia, Universidade de São Paulo (USP). Caixa Postal 42.494, 04218-970, São Paulo, SP, Brasil. E-mail: toncriss@uol.com.br
11. P.O. Box 375, Pearce, Arizona, 85625, U.S.A. E-mail : azbycid@yahoo.com
12. Antenne IRD, Entomologie, Département de Systématique et Évolution, Muséum national d'Histoire naturelle, 45, rue Buffon, F-75005 Paris, France. E-mail: tava@mnhn.fr
13. Florida State Collection of Arthropods, Florida Department of Agriculture and Consumer Services. P.O. Box 147100 Gainesville, Florida, 32614-7100, U.S.A. E-mail: mthomas59@cox.net
14. American Coleoptera Museum. 8734 Paisano Pass, San Antonio, Texas 78255-3523, U.S.A. E-mail: wappes@earthlink.net

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INTRODUCTION

Bates (1873) described *Ommata* (*Eclipta*) as having "Legs slender; middle femora abruptly but not very broadly clavate; elytra with sides subparallel, apex truncated". The subgenus was divided by him in two species groups: with "Elytra abbreviated", for *O.* (*E.*) *eirene* (Newman, 1841), *O.* (*E.*) *castanea* Bates, 1873, *O.* (*E.*) *thoracica* Bates, 1873, *O.* (*E.*) *flavicollis* Bates, 1873, *O.* (*E.*) *eunomia* (Newman, 1841), *O.* (*E.*) *brachialis* Bates, 1873, *O.* (*E.*) *monostigma* (Bates, 1869), and *O.* (*E.*) *liturifera* Bates, 1873; and with "Elytra nearly reaching the tip of the abdomen", for *O.* (*E.*) *prolixa* Bates, 1873, *O.* (*E.*) *lanuginosa* Bates, 1873, *O.* (*E.*) *cribripennis* Bates, 1873, *O.* (*E.*) *erythordera* Bates, 1873, *O.* (*E.*) *vitticollis* Bates, 1873, *O.* (*E.*) *malthinoides* (Bates, 1870), *O.* (*E.*) *ruficollis* (Bates, 1870), *O.* (*E.*) *anoguttata* Bates, 1873, *O.* (*E.*) *aegrota* (Bates, 1872), *O.* (*E.*) *xantho* Bates, 1873, *O.* (*E.*) *poecila* Bates, 1873, and *O.* (*E.*) *fenestrata* (Lucas, 1859).

During the 20th century, several species were described in *Eclipta,* and Zajciw (1965) transferred *Ommata* (*Rhopalessa*) *tenuis* (Burmeister, 1865) to *O.* (*Eclipta*). Peñaherrera-Leiva & Tavakilian (2004) designated *Ommata* (*Eclipta*) *flavicollis* as type species of *Eclipta.* Martins & Santos-Silva (2010) considered *Eclipta* as distinct from *Ommata* White, 1855. Recently, Clarke (2010) transferred *O.* (*E.*) *xantho* and *O.* (*E.*) *poecila* to *Stultutragus* Clarke, 2010; and Martins *et al.* (2012) transferred *O.* (*E.*) *eunomia* and *O.* (*E.*) *monostigma* to *Ecliptoides* Tavakilian & Peñaherrera-Leiva, 2005. Clarke (2011) described *Paraeclipta* and transferred the following species to it: *Eclipta bicoloripes* (Zajciw, 1965), *E. croceicornis* (Gounelle, 1911), *E. flavipes* (Melzer, 1922), *E. jejuna* (Gounelle, 1911), *E. kawensis* (Tavakilian & Peñaherrera-Leiva, 2004), *E. longipennis* (Fisher, 1947), *E. rectipennis* (Zajciw, 1965), *E. soumourouensis* (Tavakilian & Peñaherrera-Leiva, 2003), *E. tenuis* (Burmeister, 1865), and *E. unicoloripes* (Zajciw, 1965). According to Monné (2015), *Eclipta* currently encompasses 57 species distributed in the three Americas (only Mexico in North America).

Many of the species currently placed in *Eclipta* differ notably from the type species and, evidently, do not belong to the genus. However, without a detailed revision, it is not possible to know if a new genus is warranted for some species and if others may need to be transferred to other known genera. The new species herein described is somewhat aberrant to the genus, mainly when compared with *E. flavicollis,* but due to the presence of similar species in the genus, its placement in *Eclipta* is justified.

MATERIAL AND METHODS

Photographs were taken with a Canon EOS Rebel T3i DSLR camera, Canon MP-E 65 mm f/2.8 1-5X macro lens, controlled by Zerene Stacker AutoMontage software. Measurements were taken in "mm" using a micrometer ocular Hensoldt/Wetzlar – Mess 10 in the Leica MZ6 stereomicroscope, also used in the study of the specimen.

Eclipta birai sp. nov.
(Figs. 1-4)

Description: Holotype female: Color: Head dark-brown; antennae reddish-brown, lighter toward apex; prothorax orangish, except for large dark-brown area on basal half of pronotum, abruptly narrowed about middle of lateral side, then obliquely narrowed toward ventral side; mesosternum and mesepisterna brown, more reddish depending on angle of light; mesepimera reddish-brown, gradually yellowish toward mesocoxae; metepisterna and lateral sides of metasternum reddish-brown; area of metasternum close to metacoxal cavities yellowish; remaining surface of metasternum dark-brown; elytra brownish, except for two wide, transverse, yellowish bands, one at basal sixth, another about distal fifth; ventrite I orangish; ventrites II-V dark-brown, almost black; coxae orangish; pro- and mesotrochanters orangish, reddish-brown toward apex; metatrochanters reddish-brown; femora reddish-brown, on pro- and mesofemora lighter toward apex, on metafemora with yellowish ring on apex of club; tibiae and tarsi brown, more reddish depending on angle of light.

Head: Rostrum (between apex of inferior ocular lobe and genal apex) about as long as 0.4 times length of lower eye lobe in frontal view. Frons and area between lower eyes lobes moderately coarsely, abundantly punctate; with short, yellowish-white setae, denser close to lateral sides of lower eyes lobes. Vertex moderately coarsely, abundantly punctate; with short, moderately sparse yellowish-white setae, interspersed with long setae. Coronal suture distinct from clypeus to prothoracic margin. Antennal tubercles moderately coarsely punctate on base of frontal side, finely punctate on remaining surface. Labrum moderately coarsely, abundantly punctate (punctures partially confluent); with short setae, on each side with one long setae. Gula shiny, transversely sulcate. Submentum laterally moderately coarsely punctate, centrally somewhat smooth; with

short, moderately sparse setae. Area behind lower eye lobes with long, sparse setae close to eye. Lateral side of mandibles moderately coarsely, abundantly punctate; with short, sparse setae and one long setae at basal third. Distance between upper eye lobes equal to 0.70 times length of scape; distance between lower eye lobes, in frontal view, equal to 0.3 times length of scape. Antennae as long as 1.1 times elytral length; reaching distal third of elytra; antennomeres III-IV filiform; antennomeres V-X enlarged toward apex; antennomeres V-XI forming slightly distinct club. Scape, pedicel, and antennomeres III-V with long, dark, thick setae ventrally; antennal formula (ratio) based on antennomere III: scape = 0.80; pedicel = 0.32; IV = 0.56; V = 0.80; VI = 0.76; VII = 0.68; VIII = 0.60; IX = 0.60; X = 0.56; XI = 0.68.

Thorax: Prothorax subcylindrical, 1.15 times as long as wide, without lateral tubercles, rounded about middle sides, slightly wider at base than anteriorly. Pronotum with three callosities at basal half, two large, slightly distinct, punctate, placed laterally, another centrally, subsmooth, distinct, drop-like; coarsely, abundantly punctate, except for moderately finely punctate transverse band near anterior margin, and smooth narrow band close to anterior margin; base pubescent, interspersed with long setae; remaining surface with long, moderately sparse setae. Prosternum microsculptured, coarsely punctate at basal two-thirds, subsmooth at anterior third; basal two-thirds pubescent, interspersed with long setae; anterior third with short, sparse setae. Prosternal process notably narrowed centrally, triangularly expanded posteriorly. Mesosternum with short, abundant setae, not obliterating integu-

FIGURES 1-4: *Eclipta birai* sp. nov., holotype female: **(1)** dorsal view; **(2)** ventral view; **(3)** lateral view; **(4)** head, frontal view.

ment. Metasternum finely, densely punctate laterally (area narrowed from anterior to posterior margin), interspersed with moderately coarse punctures (mainly anteriorly); remaining surface with moderately fine, sparse punctures, except for smooth center-longitudinal area; area densely punctate with pubescence, interspersed with long setae; remaining surface with long, sparse setae, except for glabrous center-longitudinal area. Metepisterna notably coarsely punctate on basal third, abundantly, moderately coarse punctures on remaining surface; with short setae interspersed with long setae.

Elytra: Coarsely, abundantly punctate throughout; with long setae on basal quarter, shorter toward apex; apex obliquely truncate, with angles slightly projected.

Legs: Femora clavate; metafemora distinctly longer than pro- and mesofemora; apex of metafemora reaching basal third of abdominal segment IV. Metatarsomere I 1.1 times as long as II-III together.

Abdomen: Cylindrical, most of last segment not covered by elytra. Ventrites I-IV coarsely, abundantly punctate laterally, gradually sparser toward center; with moderately long, sparse setae. Ventrite V shorter than IV; truncate at apex; finely, abundantly punctate; with short and long, moderately abundant setae.

Dimensions in mm (holotype female): Total length (from mandibular apex to abdominal apex), 5.90; prothorax: length, 1.10; anterior width, 0.75; posterior width, 0.85; humeral width, 1.10; elytral length, 4.00.

Type material: Holotype female from BRAZIL, *São Paulo:* Guarulhos, 02.XI.1942, F.S. Pereira col. (MZSP).

Etymology: The new species is named after the late Ubirajara Ribeiro Martins de Souza (Bira).

Remarks: Eclipta birai sp. nov. is similar to *E. amabilis* (Melzer, 1934), but differs as follows: antennomeres with single color; prothorax distinctly narrower anteriorly than at base; pronotum with anterior half pale orange and basal half dark-brown; base of elytra with transverse, continuous yellowish band; distal yellowish band of elytra not reaching apex; elytra longer than 3.0 times prothoracic length; peduncle of metafemora reddish-brown. In *E. amabilis* the antennomeres are bicolored, the prothorax is about as wide at the base as anteriorly, the pronotum is pale orange with one large dark-brown macula on each side, the base of elytra have one light macula on each side of scutellum, the distal light band of elytra reaches the apex, the elytra are shorter than 3.0 times the prothoracic length, and the peduncles of metafemora are yellowish.

RESUMO

Uma nova espécie de Eclipta *Bates, 1873 do Brasil (São Paulo),* E. birai, *é descrita e ilustrada. Uma homenagem ao falecido Ubirajara Ribeiro Martins de Souza é acrescentada ao final do trabalho.*

Palavras-Chave: América do Sul; Cerambycinae; Rhinotragini; Taxonomia.

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TRIBUTE TO UBIRAJARA RIBEIRO MARTINS DE SOUZA (FIGS. 5-16)

The first question that most readers will likely ask is: why so many authors to describe a single species? The response is simple: to thank Ubirajara R. Martins de Souza for his professionalism, perpetual willingness to help others, enormous contribution to the knowledge of Cerambycidae, and especially for his friendship to so many colleagues. We recently lost his presence among us and thus we choose this simple way to thank him.

It is important to state that the order of authorship in the work is unimportant to us. Thus, we chose to list authors alphabetically by last name.

Ubirajara Ribeiro Martins de Souza, Bira, as he liked to be called (and as we will use here), was born in São Paulo (Brazil, SP) on July 08, 1932. He passed away on the afternoon of May 26, 2015. In the last three years of his life, Bira repeatedly suffered from pneumonia and lung infections. During this time, he could only return to his office at the Museum of Zoology a few times, and for only a few hours at a time. However, he never complained about his physical condition. He only complained when he could not work on cerambycids at home. The Museum of Zoology sent him a microscope (his old, beloved, personal stereomicroscope). This allowed him to continue his work in his home office. Bira had an unbelievable memory and, frequently, could identify the specimens that were regularly sent to him without a reference collection at hand. Despite his failing health, without a doubt Bira worked on cerambycids almost until his last day.

In 1954, Bira obtained his degree in Agronomy from the Federal University of Viçosa, in the state of Minas Gerais (Brazil). It was in Viçosa that he caught a specimen of Cerambycidae which changed his life forever: a male specimen of *Psygmatocerus wagleri* Perty, 1828. The beautifully flabellate antennae of that species fascinated him, and it was "love at first sight".

After completing his studies at the University of Viçosa, Bira worked as a trainee at the Biological Institute of São Paulo. During this time, he was awarded a scholarship from the Rockefeller Foundation, which allowed him to study in Mexico, at "Oficina de Estudios Especiales", for one year. Bira often recounted many fun memories that occurred during his stay in Mexico, mainly during the trips to collect Cerambycidae.

When he returned from Mexico, Bira worked as a trainee of Frederico Lane, an expert on Cerambycidae, at the Museum of Zoology. It was Lane who said to Bira: here is a group of cerambycids that needs to be studied. That group was the tribe Ibidionini. Bira recalled that he was startled when upon seeing the size and difficulty of the task. Nonetheless he diligently went to work on the tribe producing numerous taxonomic papers and then from 1967 to 1971 he published his monumental "Monografia da tribo Ibidionini" totaling more than 1,300 pages of generic and species descriptions, many dozens of keys, and hundreds of line drawings and photographs. Those who have copies continue to treasure this "opus magnum" today. In 1959 Bira was hired to work in the Museum of Zoology.

Soon, Frederico Lane was off to The Natural History Museum in London, leaving Bira alone to work with Cerambycidae. During Lane's lengthy absence, the task of cerambycid identifications fell to Bira. He recalled it as not only a very difficult time, but also one where he learned a lot about cerambycids.

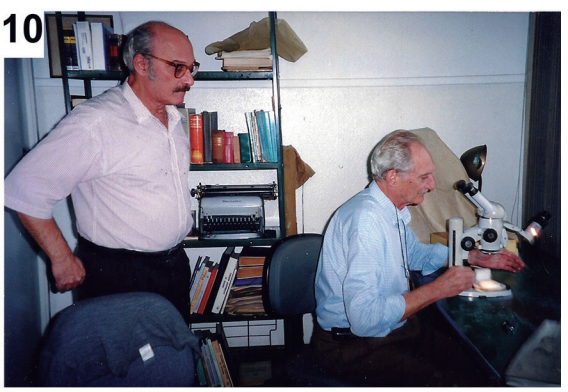
In 1960, Bira travelled to France to study Ibidionini in the "Muséum national d'Histoire naturelle" in Paris. Bira never tired of telling of his adventures in the city, mainly about how he survived on the meager resources available to him. In Paris he met André Villiers, another Cerambycidae expert. Bira spoke fondly about the various times that Villiers entered the office with a cerambycid in hands, to show Bira and ask for his opinion. According to Bira, Villiers always started the conversation by saying "monsieur Martins". Bira always had high praise for Villiers, mainly for his knowledge and kindness.

That same year, Bira left Paris for The Natural History Museum in London, to continue his study of Ibidionini. While there he met Evelyn Arthur Joseph Duffy, author of several books on world cerambycids. Frequently, they had some very good moments together, mainly talking about Cerambycidae. Bira would laugh whenever he recounted a story told to him by Duffy. During World War II, Duffy was waiting for a package with a specimen he really wanted to see. When the box finally arrived, Duffy was unable to see the specimen due to the electrical blackout, so he went up to the roof to see the specimen in better light. Once on the roof, bombs once again began to fall near the museum. Frightened by the bomb blasts, Duffy threw the box into the air, and the specimen was never seen again!

In 1965, Bira visited the United States, on a research grant from the Guggenheim Foundation. He studied at the University of California Berkeley, where he met the cerambycid expert John A. Chemsak, with whom he

developed a lasting friendship. There, he also met Chemsak's mentor, Earle Gorton Linsley. Despite his various assignments at the university, Linsley always found time to talk to Bira about cerambycids. Bira loved those moments, and always said that Linsley was a gentleman. Bira, Chemsak, and Linsley traveled several times to study Cerambycidae in the field, mainly because Linsley wanted to show them the isolated communities of some species of Cerambycidae (subspecies for him). Bira never forgot those special experiences they had afield.

In 1975, Bira earned his PhD in biological sciences from the University of São Paulo (Brazil, SP). Later, Bira was the PhD supervisor of some of the authors of this publication, as well as many others. Other authors of this work visited Bira in the Museum of Zoology, to consult with him and work on Cerambycidae.



FIGURES 5-10: Photographs of Bira Martins with colleagues. **(5)** Bira's office, September 2010: Bira (left), Eugenio H. Nearns (center), Antonio Santos-Silva (right); **(6)** Bira's office, September 2003: Steven W. Lingafelter (left), Bira (center), James E. Wappes (right); **(7)** Costa Rica, May 2007, Bira and Maria Helena M. Galileo; **(8)** Bira's office, March 2012: Larry G. Bezark (left); **(9)** French Guiana, May 1989, from left to right: Gérard L. Tavakilian, Bira, Maria Helena M. Galileo, Miguel A. Monné; **(10)** Bira's office, May 2000: Miguel A. Monné (left).

Despite his several positions in the museum, Bira actively participated in the Brazilian Society of Entomology, being member of the executive committee from 1961 to 1963, and from 1967 to 1969. From 1976 to 1986 he was president of the Society. He devoted time to the renovation and modernization of "Revista Brasileira de Entomologia", and scientific rigor. During these years, he dedicated a lot time to the journal, often leaving the museum late at night. It has always been his passion for Entomology that moved him.

From 1984 to 2000, Bira was a commissioner of the International Commission of Zoological Nomenclature. Some of the authors of the work were present the many times when someone entered in his office to seek assistance with a nomenclatural question. Bira always stopped what he was doing and devoted full attention to

FIGURES 11-16: Photographs of Bira Martins with colleagues. **(11)** Bira's office, April 2012, from left to right: Allan Carelli Aragão, Antonio Santos-Silva, Juan Pablo Botero, Bira; **(12)** December 2008, Bira working on the specimens collected in Bolivia; **(13)** French Guiana, May 1989: Bira (left) and Miguel A. Monné (right); **(14)** Museum of Zoology, Carlos José Einicker Lamas' office, April 2012, Bira; **(15)** Bolivia, November 2008: Sergio Antonio Vanin (left) and Bira; **(16)** Curitiba (Brazil), February 2003, Bira and Dilma Solange Napp.

each person, even when the problem was very complex and demanded a lot of time to be solved. It was his desire to help everyone that made him a very special and dear person in the museum, and appreciated by students, researchers, and employees alike.

Starting in 1970, Bira also taught postgraduate courses or specializations in several institutions. For example: "Escola Superior de Agricultura "Luiz de Queiroz" in Piracicaba, São Paulo; "Faculdade de Saúde Pública", São Paulo, São Paulo; "Instituto de Biociências", São Paulo, São Paulo; "Universidade Federal da Paraíba", João Pessoa, Paraíba; "Universidade Federal de Juiz de Fora", Juiz de Fora, Minas Gerais; "Universidade Federal de Lavras", Lavras, Minas Gerais; "Universidade Federal de Viçosa", Viçosa, Minas Gerais; "Universidade Estadual Paulista", campus Rio Claro and campus Botucatu, São Paulo; "Instituto de Pesquisas da Amazônia", Manaus, Amazonas; "Universidade Federal do Paraná", Curitiba, Paraná; and, of course, "Museu de Zoologia", São Paulo, São Paulo. It was in the latter that he gave his last course just few years ago. The number of former students who frequently returned to visit him was very large and, amazingly, Bira often remembered their names and where they had taken the course.

Some of the authors of this work travelled with Bira on collecting trips. A special place in Brazil for Bira was "Serra do Caraça", a mountain in the state of Minas Gerais. Bira loved this place and visited several times. According to one of the authors, during those trips, often they climbed to the top of the hill and shouted the name of the species of Cerambycidae that they wanted to capture, as if to call to them. When he was younger, Bira smoked. When collecting in Caraça, as Bira and the other author smoked, they were always careful not to throw cigarettes on the floor. One night, Bira said to his companion in the field: "do not throw cigarettes on the floor". However, the "cigarette" was a species of *Cryptocranium* that mimicked a cigarette and, evidently, became part of their collection. That is just a funny little story that remains fondly in the memory of this author. The same author, who was with Bira collecting in French Guiana, remembers another humorous case, which shows Bira's enthusiasm. Bira forgot to bring suitable footwear for the collecting trip, and had to use the tennis shoes of that author. However, Bira's shoe size was 42, while his friend's was 38. So, Bira was walking in the jungle on his tiptoes.

Bira regularly received a large number of specimens for identification, from around Brazil as well as other countries. In his office at the museum, there were always several drawers of specimens sent by institutions and/or private collections. Bira worked on these specimens constantly. In recent years, while Bira was working at home, when one of the authors of this work said to him that there was much material to identify and even more was coming. Bira replied (translated): "It's normal. My life has always been like that". When a new box with material for study arrived, Bira was like a child opening a Christmas present. Then, his eyes almost immediately identified if there was something interesting among the specimens. It was wonderful to listen to him say the name of the genus of the "good specimen", often, when the species was known, he would also remember the name of the species' author and, sometimes, also the year.

The collection of Cerambycidae is among the best curated and organized in the Museum of Zoology. He always spent part of his day, usually the last hour in the museum, to work on the organization of the collection. During his life in the museum, the collection of Cerambycidae became very large and important, with a large number of specimens donated or collected by him and/or his students.

He traveled extensively to collect specimens, mainly within Brazil, but also in other countries, such as Venezuela, Costa Rica, Bolivia, and Colombia. In 2009 he made his last trip exclusively for the collection of specimens. It was to Camacã, in Bahia (Brazil), and unfortunately, did not result in many specimens.

In 1997, Bira started a series of books dedicated to the study of South American Cerambycidae. He always said he could never complete the work, but with few exceptions, a new volume was published each year. The last volume, number 14, was published in November 2014. This last volume was written during his painful convalescence. Bira was working on volume 15 (Aerenicini) when he passed away. We should say here that, in the last two years of his life, Bira could only breathe with the help of a portable oxygen concentrator. However, this never diminished his desire to work.

In 2002, when he turned 70 years old, Bira faced mandatory retirement, as required by the University of São Paulo (the Museum of Zoology belongs to that University). However, for Bira, this was a mere formality, and he continued to work in the museum as before.

Bira published over 400 papers, some of which are yet in press while we write this tribute, as well as some 30 books or book chapters. During his career he described several tribes, numerous genera, and over 2,000 species. These were not only in Cerambycidae (and related families, such as Disteniidae and Vesperidae), but also in the Languriidae, a very important work that is less known or forgotten.

As one of the authors wrote in an email to another author: "All the workers on Neotropical Cerambycidae must feel like orphans today". The same author recalls a two month visit with Bira in 1982 with very fond memories. The author recalls that, after having worked until late in the night identifying specimens, Bira would always take out a bottle of fine "cachaça" to raise a toast to their shared work and love of longicorns. He also remembers how Bira would sing Brazilian songs while gesturing as if he were playing a tambourine, as they gathered around the table with bottles of beer. The author remembers these moments as the most emotionally intense of his life.

Bira was also instrumental in the Museum's acquisition of the very large and important insect collection of Richard von Diringshofen. The collection remains one of the most important holdings at the Museum, and a great number of specimens (mainly in Lepidoptera and Coleoptera) remain unsorted to this day.

What can we say, Bira? Only that we miss you. But also, and mainly, thank you very much for your existence in our life. We treasure each and every memory you provided us by being there!