

ECHOES OF A LEGACY: FRIAR KEMPF AND THE DAWN OF MYRMECOLOGY IN BRAZIL

Livia P. Prado

Museu Paraense Emílio Goeldi, Belém, Pará, Brazil

Rodrigo M. Feitosa

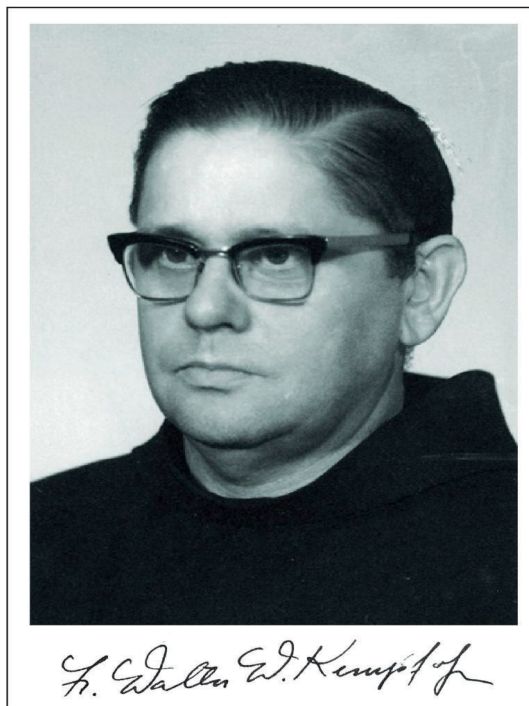
Universidade Federal do Paraná, Curitiba, Paraná, Brazil

Friar Walter W. Kempf (1920–1976) (Figure 1) was one of the most prominent taxonomists and myrmecologists worldwide, having described more than 200 ant taxa and published over 100 scientific papers. He passed away prematurely at the age of 56 while preparing to attend the 'XV International Congress of Entomology' in Washington, D.C., USA. At the same time, William L. Overall arrived in Brazil to take up the position of entomologist at the Museu Paraense Emílio Goeldi (MPEG) in Belém, Pará, Brazil. His arrival marked the resumption of entomological research activities at MPEG, after years affected by institutional crises and challenges in scientific research in the Amazonia.

Before his arrival in Brazil, Overall had already been in correspondence with several Brazilian researchers, including Friar Kempf. However, the day of his arrival in Brazil was also, regrettably, marked by the passing of Friar Kempf. Some time later, in a gesture that symbolically brought their paths together, Overall received from Domiciano Pereira de Souza Dias, scientist, photographer and professor (now retired) at the Universidade de Brasília, a small selection of Friar Kempf's library materials. Among these, works on the ant fauna of Amazonia were of particular significance, including the article *Levantamento das formigas da mata amazônica, nos arredores de Belém do Pará, Brasil* (Kempf, 1970), a by-product of the International Year of Biology (1966–1967).

Nearly five decades later, while revisiting the library with Overall (Figure 2), already in retirement, and sorting through its materials, we struck "gold": an unpublished manuscript by Friar Kempf, preserved in three versions, two preliminary and one apparently final. Our analysis indicates that the text was never published. It begins with observations on the ant fauna of the state of São Paulo, but across the versions it expands into a broader reflection on the history of myrmecological studies in Brazil (Figure 3). Whether Friar Kempf conceived it as a publication, as a lecture draft, or for educational purposes remains unclear. However, the existence of multiple, progressively refined versions in both content and formatting, strongly suggests that Friar Kempf intended it for wider circulation.

Figure 1: portrait of walter w. kempf (photographer unknown); with his signature taken from a dedication to friar thomaz borgmeier in an article.



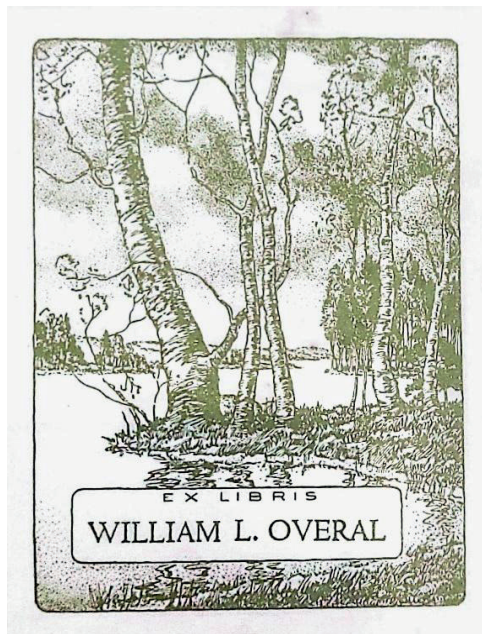
In tribute to Friar Kempf, Cardinal Paulo Evaristo Arns (1978) recalled a phrase he often repeated, summarizing his scientific ethos (freely translated): *"I must get used to speaking and writing using only nouns; adjectives distract"*. The unpublished text reflected this principle: it is concise, direct, and each section contributes precisely to the understanding of the history of myrmecology in Brazil. The relevance of the text is also evident in its contemporary significance. Friar Kempf acknowledges the value of pre-Linnaean records and traditional knowledge, such as vernacular names, integrating them with the scientific framework of his time. He concludes by stressing the need to decentralize the production of knowledge about Brazil's fauna and underscores the importance of creating and maintaining scientific collections across the country.

All myrmecologists working in Brazil are, to varying degrees, heirs to the legacy of Friar Kempf (Prado *et al.*, 2021). The recovery of this text allows a revisit of the early days of myrmecology in the country from the perspective of a

researcher who was instrumental in building and consolidating its foundations. The publication of this material within a book, the result of a major initiative that once again projects Brazilian myrmecology onto the world stage, coincided in a particularly special way with the discovery of this text, a symbolic coincidence that will be recorded in history. Making the text available today not only helps preserve Kempf's legacy for future generations but also sheds light on the broader history of myrmecology in Brazil.

This discovery is also an opportunity to publicly express gratitude to Professor William L. Overal, recently retired as a senior researcher at the Museu Paraense Emílio Goeldi. Overal has contributed to the study of Amazonian fauna from multiple perspectives to the training of generations of researchers, and to the preservation of the memory of science in Brazil. His name appears on numerous ant specimen labels in the MPEG collection and in many publications documenting the fauna of one of the most biodiverse regions on Earth. Once again, he contributed by providing key information, carefully translating this manuscript according to the recommendations he had received from his friend Nelson Papavero, and generously sharing both knowledge and materials.

Figure 2: Ex-libris from the library of Dr. William L. Overal.



ESSAY ON THE HISTORY OF THE EXPLORATION OF ANTS IN BRAZIL

Walter Wolfgang Kempf (1920-1976) †
(Translated from the Portuguese by William Leslie Overal)

There are over a thousand species of ants in Brazil. However, the systematic survey and study of this rich fauna is relatively recent. Information dating back to the pre-Linear period, i.e. before 1758, is scarce and imprecise. For example, Marcgrave (1648) lists two or three species, of which only one, the *saúva*, can be recognized with any certainty.

Equally poor in this respect are the results of the first century of binomial nomenclature. Lineu, in the tenth edition of his *Systema Naturae*, recognized 17 species of ants, seven of which actually occur in Brazil, but these were described using material from the Guianas, which at the time provided the overwhelming majority of new species from the Neotropical Region.

In the first monograph on ants, the *Histoire Naturelle des Fourmis*, written by Latreille in 1802, there is a direct reference to Brazil only in the case of one species. This is the well-known black *sará-sará* with red legs, now known as *Camponotus (Myrmothrix) rufipes*, described as early as 1775 by Fabricius, and very common in southern Brazil.

With the advent of the 19th century, the era of the great voyages of scientific exploration of Brazil began, carried out by the "classic" naturalists such as Spix, Martius, Maximilian de Wied Neuwied, St. Hilaire, Eschwege, Pohl, and others. The reference to ants in the works of these travelers is merely incidental. Small, unsightly animals were generally not collected. As a result, few specimens reached European taxonomists and few species were described at that time. Among the first collectors of our ants were the Englishman William Swainson, who visited various locations along the coast from Pernambuco to Rio between 1817 and 1818, John Miers, who set up and headed the first minting workshop in Rio between 1831 and 1838, and above all the traveler W. Burchell, who visited a large part of Brazil and collected, among other things, the first ant officially recorded as coming from São Paulo, *Eciton burchelli*, a native of Santos, described by Westwood.

All these achievements were only fragmentary, of little significance. The honor of having devoted more interest to our ants, of having collected them in large numbers and systematically, belongs among many others to the famous English naturalist H. W. Bates, who for eleven years, from 1848 to 1959, traveled along the Amazon River and its tributaries. Among the immense zoological collection amassed by this zealous researcher was a good number of new species of ants, and he made the first major contribution to our myrmecography, with the description of around 100 species. It is only to be regretted that the copious and extremely interesting material fell into the hands of a taxonomist with very little talent, Frederick Smith, who elaborated on the material in various publications, above all in the sixth volume of the British Museum's Hymenoptera catalog, and managed to produce a great deal of confusion which to this day challenges the curiosity of those who want to know what species Bates collected.

Peter Wilhelm Lund, the famous explorer of Lagoa Santa, also made a myrmecological contribution in 1831 with his letter to M. Audouin about the habits of some ants in Brazil. Written in French, this letter caused quite a stir and was immediately translated into German and English. The letter, which takes up 25 printed pages in the original publication, contains biological observations, some of which are erroneous and inaccurate, and new names for species that unfortunately have not been well characterized.

Around 1880, Lothar Hetschko collected ants in what is now the state of Santa Catarina and in Contestado, in the south of Paraná and in the Palmas region. He was an expert collector of precise and refined collecting methods that have not been surpassed to this day. The numerous ants ended up in the hands of the "Ameisen-Mayr" in Vienna, the competent Dr. Gustav Mayr, one of the best ant taxonomists to date. Mayr published a work on this material in 1887, entitled *Suedamerikanische Formiciden*, which is still the basis for the study of Brazilian ants, especially in the southern region.

The great flowering of systematic science in the last half of the 19th century led to an intensification of collecting. A. Schulz collected in Pará, where Emilio Goeldi also became interested in ants. The latter also collected in Rio and São Paulo. In Ceará we find the first native Brazilian to take an interest in ants, Mr. Diaz da Rocha, who put together a good collection, studied by A. Frei. E. Ule, a botanist of great stature, was also interested in the ants that nest in Amazonian

plants. In the south of Brazil, we have Dr. Moeller, nephew of the great Fritz Mueller, who studied the *quenquéns* and other related ants in Blumenau, and Germain. We could go on and on with this list, but as these are fragmentary contributions, we have chosen to end it.

When Mayr laid the foundations of myrmecological systematics in Brazil, and the sage men of myrmecology, Carlo Emery and Auguste Forel, emerged in Europe, the eminent German naturalist Hermann von Ihering moved to Brazil. He settled in Rio Grande do Sul and began studying the ants of that region. The systematic elaboration was the responsibility of the competent Emery (1887), who also supervised the biological and zoogeographical work that Ihering personally wrote. This work, published under the title *Die Ameisen von Rio Grande do Sul*, appeared in 1894, when its author had already become Director of the *Museu Paulista* (since 1892).

The figure of Ihering is of great importance in Brazilian myrmecology, firstly because he transplanted the study of ants to the country, secondly because when he moved to São Paulo, he began to explore the myrmecofauna of this state, which is now the best known in Brazil, and thirdly because he was able to pass on his interest to his intellectual followers and heirs, Hermann Luederwaldt and Friar Thomas Borgmeier.

At the head of the Museum, von Ihering organized large collections in São Paulo and neighboring states, adding to the museum's holdings. Among the collectors were the two Garbe men, father and son, Schwebel, and João L. Lima. As he had done in Rio Grande do Sul, he sent the ants to Emery for determination and description. In 1906, however, Emery suffered a paraplegic attack, which left him paralyzed on one side, and while he was recovering from the bout, he gave the material to his colleague and friend Forel.

This was a rather unfortunate circumstance, because by that time, despite his recognized competence, Forel had embarked on a mass production of new species, subspecies, and varieties through quick and superficial descriptions, taking little care to systematically assimilate them. Luckily, von Ihering kept half the specimens of all the series, so that the *Museu Paulista* was left, if not with the holotypes, at least with authentic material of the species described by Forel.

Administrative posts and other interests gradually took Hermann von Ihering away from myrmecological activities, which were soon taken over by

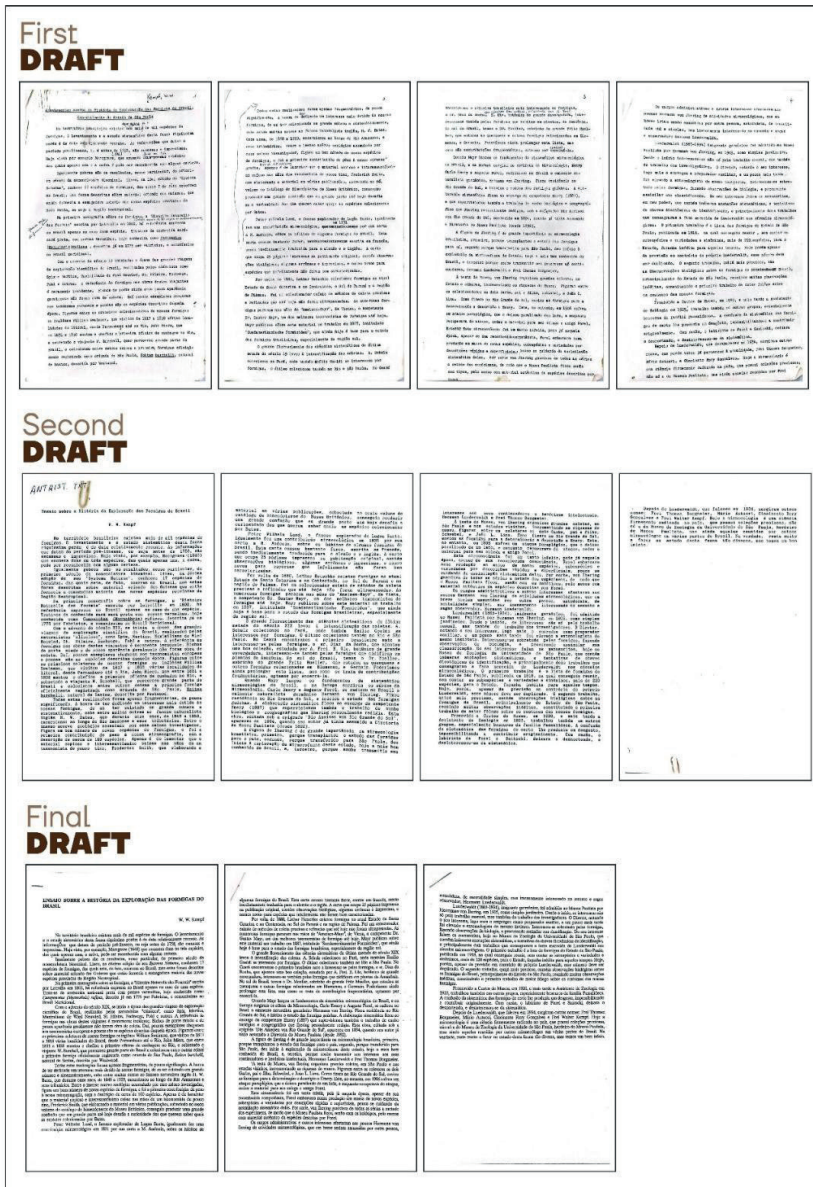
another person, self-taught, unsophisticated, but immensely interested in the subject and a shrewd observer, Hermann Luederwaldt.

Luederwaldt (1865-1934), a German immigrant, was admitted to the *Museu Paulista* by Hermann von Ihering in 1905 as a simple gardener. From the start, he was interested not only in manual labor, but also in the work of researchers. The Director, noticing his interest, soon employed him as an assistant preparator, and a little later he was promoted to entomologist at the same institute. He was particularly interested in ants, making biological observations and trying to assimilate their classification. His interest is reflected in the manuscripts, now in the Zoology Museum of the University of São Paulo, which contain numerous systematic notes and attempts at dichotomous identification keys, and above all two works that have earned Luederwaldt well-deserved fame in myrmecological circles. The first work is the list of ants of the state of São Paulo, published in 1918, in which he managed to gather, not counting subspecies and varieties and synonyms, more than 220 species for the state, an unprecedented feat for those times. Today, however, despite Luederwaldt's own prediction to the contrary, that number should be doubled. The second work, perhaps more valuable, contains biological observations on the ants of Brazil, especially in the state of São Paulo, bringing together many unpublished observations, constituting the first major work on the ecology of our ants.

Promoted by the museum in 1920, and later to Assistant in Zoology in 1925, he also worked on other groups, especially beetles of the Passalidae family. The confusion over the systematics of ants certainly caused him anguish, making it impossible for him to contribute originally. The labyrinth of Forel and Santschi had left him bewildered, and he became disinterested in systematics.

After Luederwaldt, who died in 1934, other names emerged: Friar Thomaz Borgmeier, Mário Autuori, Cincinnato Rory Gonçalves, and Friar Walter Kempf. Today Myrmecology is a science firmly established in the country, which has precious collections, not only that of the Zoology Museum of the University of São Paulo, heir to the *Paulista* Museum, but also those gathered by other myrmecologists in various parts of Brazil. In fact, there is still much to be done in the study of this diverse fauna, but we have made a good start.

Figure 3. The three versions of Walter W. Kempf's document, recently rediscovered at the Museu Paraense Emílio Goeldi.



REFERENCES

Arns, C.P.E. 1978. Friar Walter visto por colega de seminário. **Studia Entomologica**, 20: 19-20.

Kempf, W. W. 1970. Levantamento das formigas da Mata Amazônica, nos Arredores de Belém do Pará, Brasil. **Studia Entomologica**, 13:321-344.

Prado, L. P.; Feitosa, R. M.; Silva, R. R.; Brandão, C. R. F. In honor of Walter W. Kempf on the centenary of his birth in 1920. **Myrmecological News Blog**, March 3, 2021. Available at: <https://blog.myrmecologicalnews.org/2021/03/03/in-honor-of-walter-w-kempf-on-the-centenary-of-his-birth-in-1920/>. Accessed: August 03, 2025.