



PROFESSOR IN HALLE



IN THE 80TH YEAR, IN BUENOS AIRES



MONUMENT IN THE PARQUE CENTE-
NARIO IN BUENOS AIRES

HERMANN BURMEISTER, 1807 TO 1892¹

6016

WERNER ULRICH²

Professor Emeritus of Zoology, Freie Universität, Berlin-Dahlem

SURVEY

Burmeister is thought of primarily as an outstanding German entomologist. However, this view is too simplistic. Burmeister was an all-round scientist who lived two very different lives. One of them (January 15, 1807 to 1861) in Germany or travelling in Brazil (1851) and Argentina (1856 to 1860), the other in Buenos Aires (1861 to May 2, 1892). In Germany, he was first (1831–1837) a grammar school teacher and "Privatdozent" in Berlin, then (1837–1861) full professor of zoology and director of the zoological museum of the University of Halle. In 1861, he left his official position and his native country to become the director of the National Museum of Natural History in Buenos Aires and an adviser to the aspiring Republic of Argentina. In Germany, he accomplished his most important entomological works; in Buenos Aires, his great publications in paleontology. This break in the course of his life is revealed also in his two marriages.

It is because of this divided life that in Germany Burmeister is known specifically as an entomologist. While in South America he was recognized as a great scientist and pioneer, cited together with Alexander von Humboldt. Argentina honored him with a public funeral and a monument.

Because of his profound education—he was Doctor of Medicine and Philosophy—because of his great talents, vitality, and interest in all things, he worked restlessly to the end of his life and distinguished himself in many different spheres: as geographer and geologist, as zoologist and botanist, as paleontologist, explorer, and as one who set his heart on the extension of knowledge and learning as long as he lived. In biology, his field was classic zoology: morphology, anatomy, and systematics. He worked much on insects, especially beetles, and on birds, mammals, whales, and extinct vertebrates, but did not specialize in any area.

Without interruption he published throughout 63 years; works of several volumes, richly illustrated, innumerable essays, reports, and notes. He began at the age of 22 with his dissertation (1829) and ended in his 86th year

¹ Origin of the portraits: "Professor in Halle," from H. Burmeister, *Geschichte der Schöpfung*, 6 ed., Leipzig 1856; "In the 80th year," from No. 13, lit. cit; "Monument," from No. 14, lit. cit.

² Address of the author: Prof. Dr. W. Ulrich, 1 Berlin 37 (-Zehlendorf), Beerenstrasse 29, Germany.

(1892) with three papers which were not published until after his death. His list of works contains about 300 titles. While living in Buenos Aires he continued to publish numerous papers in Germany. And the list shows that no period of his creativity was characterized by any particular subject.

Burmeister was a keen observer, not a man of complicated apparatuses and methods. His dissections and drawings were excellent. As systematist he propagated a "natürliches" system which did not depend on "einem einzelnen für entscheidend angenommenen Charakter" but to the "allgemeine Ähnlichkeit." He was convinced that the multiplicity of organisms arose in a series of "Entwicklungsstufen," steps of increasing organization, and that this "Evolution," including the evolution of man, had reached its end. But, he was neither Lamarckian nor Darwinist; he accentuated: "ich glaube nicht an die Umbildung der Species, welche manche Naturforscher lehren." After a scholastic and romantic period, he remained the descriptive empiric which he was by nature. Though having worked in Berlin (1831-1837), he did not belong to the disciples of Johannes Müller and generally did not take part in the whole experimental and theoretical progress of biology. The pioneering work he took up in unexplored countries was last, not least, an escape from the second half of his century.

The usual biographies contain, in his case as in many others, little about the attraction or aversion he felt for the great events of the 19th Century, in which began for mankind a new period that was consolidated in its second half. About 1848, he became an extreme socialist. Later on, he also condemned the methods of the Spanish-Portuguese conquest and opposed slavery.

Burmeister will always be admired for his enormous performances as an individual, prompted by the exceptional vitality and capacity of a long life and caught up in an uninterrupted flow of publications of amazing velocity, overwhelming extent, and rare multiplicity. Even those who also know the limits and weak points of his personality, will recognize extreme greatness of his life's work.

THE PERSON

Burmeister's father, a customs officer, died in 1824. From him, the son inherited correctness, untiring energy, and economy. From his mother, he received cleverness of style and literary talent.

Burmeister was tall and slender; verve and elasticity could be seen in his quick steps. His appearance was one of pedantic elegance and neatness. He spoke vividly and fascinatingly without notes before him, and inspired his audience by the sovereignty of his statements and his striking sketches on the blackboard. We never see him as other than self-conscious, superior, and convinced of the greatness and correctness of his actions. He was sensitive to contradictions, reprimanding his adversaries.

He was a man of strong will, always purposeful and ready "Hindernisse

mit Gewalt aus dem Weg zu räumen" or "wie Cortes seine Schiffe in die Luft zu sprengen." "Ich bin gewohnt, heiß zu essen." A letter to the curator of his university was finished with the words "Entschuldigen Sie meine etwas dreisten Formen, andere habe ich nun einmal nicht."

Burmeister was absolutely himself, "ein Autokrat, wo er gebieten konnte, ein Republikaner, wo er sich fügen sollte." There are no important disciples, no collaborators of equal standing. In reserved obituaries, we read about his "vereinsamten, herben Wesen," about his "Charakter, der wohl kaum einen wirklichen Freund besessen, vielleicht auch nie entbehrt hat." Carlos Berg, his successor and co-worker in Buenos Aires for many years, said (1894):

Burmeister était un homme désintéressé, un travailleur infatigable, tout à la science, . . . comme homme, par ses manières dures et peu communicative, le Dr. Burmeister n'est pas parvenu à se former un cercle d'amis et d'admirateurs. . . .

His travels and his reports about them reveal his talents. The multiplicity of his interests, and the extent and order of his knowledge, his constant keen attention and the capacity to distinguish characteristics or differences, combined to enable him to see and identify many things at the time of encounter. Like A. v. Humboldt, he illustrated beautifully and amply—the camera as fellow-traveller was still unknown. Because of this ability he was able to draw and to paint anything. In one person, he was the explorer equal to any situation, the keen observer, the writer, and the illustrator.

There are also some negative trends—rarely mentioned but symptomatic—arising out of his character and talents: lack of self control, dangers of his disposition to which he succumbed sometimes or again and again. He was inclined to think that classification and order also explained "das innerste Wesen" of nature. His views were sometimes imposing but his knowledge and patience were not always sufficient to substantiate them. So, he would arrive at too grandiose plans, at simplifications, trivialities and some nonsense; his *Handbuch der Naturgeschichte* is proof of this (1836/37). He always over-reached himself quantitatively. A number of his best known titles signify works that were immensely planned but never finished. A typical example of this is the colossal fragment of his much praised *Handbuch der Entomologie* (1832–1855).

PERIOD: 1807 TO 1861

COURSE OF LIFE

To get beyond the enumeration of dates and accomplishments and to judge Burmeister himself in the framework of his own epoch, the 19th Century would have to be described with its events and great personalities. Two worlds would have to be visualized, Europe and America, and the differences between the first and last half of that century. However, there is not enough space in this essay for such a visualization.

Burmeister was born at Stralsund on January 15, 1807. At the grammar

school of his native town he had excellent teachers, to one of whom, his drawing master (W. Brüggemann) he was particularly attached. As a "Tertianer" he began to collect insects. To study medicine and science he attended the universities of Greifswald (1825-1827) and Halle (1827-1829). With his dissertation "De insectorum systemate naturali" and a grade of "rite" he graduated as a Doctor of Medicine on November 4, 1829, and as a Doctor of Philosophy on December 19, 1829. In the following year he did his military service as a "Kompaniechirurg" in Berlin and Grünberg (Silesia).

By now, Burmeister lived entirely for his scientific interests. Berlin, where he went in 1831, with its important collections, libraries, and personalities was most useful for him. He lived as a grammar school teacher, obtained his Habilitation in 1834, remaining in Berlin until he became professor in Halle in 1837. With regard to his entomological studies, not only did he visit the museum but also extensive private collections at home and abroad. While working with the collection of the wealthy shipowner, M. C. Sommer in Altona, he met Sommer's daughter, Marie Elise. They were married in 1836. By this marriage, Burmeister had two sons, Hermann and Henry, who sometimes accompanied him on his travels in South America. When Burmeister left his native country in 1861, the marriage was dissolved "on account of incompatibility of the characters."

The scientific result of the relatively few Berlin years would be outstanding enough merely in regard to its quantity. In addition to numerous essays the first parts of the *Handbuch der Entomologie*, the educational work which consisted of several books, and the treatise on Cirripedia were completed. Furthermore, he habilitated and was also a grammar school teacher during all these years. Nevertheless, he made himself "zu diesem sehr trefflichen Zoologen"³ who, at the age of 30, was called to Halle as successor to his teacher, Chr. L. Nitzsch; at first as an "extraordinarius," from 1842 as professor "ordinarius" in zoology and director of the zoological museum of Halle. Beginning in 1833, which was prior to his nomination, he was a member of the academy of Halle, called "Leopoldina." Because of his way of working rapidly and in powerful steps, he established an extraordinary reputation; he enjoyed the benevolence of the minister, v. Ladenberg, and the confidence of the aged Alexander v. Humboldt. His short political engagement during 1848 to 1850 did not affect his career but his inner self was somewhat troubled. He renounced his mandate and wanted to pause "um meine sehr angegriffene Gesundheit zu stärken und . . . mich geistig zu zerstreuen." This was the beginning of his travel to Brazil.

This travel, as well as the much longer journey to Argentina, increased his reputation, established his fame in South America, and became the mo-

³ R. Leuckart, Ueber die Morphologie und die Verwandtschaftsverhältnisse der wirbellosen Thiere. Braunschweig 1848, page 68.

tive for abandoning his country. Both of these trips commanded the special interest of A. von Humboldt who wanted news from those territories where he himself had not been. It was he who arranged for Burmeister to be granted leave for years and to be equipped "reichlich" from public means. Both times, Burmeister went to Rio de Janeiro first. On the Brazil journey, he left Halle September 12, 1850 and returned on April 9, 1852. This trip was cut short by the fact that Burmeister fell and broke his right leg. At the end of 1856, he went to the La Plata States. He first reached Buenos Aires on January 31, 1857. On his way home he crossed the Cordillera (March, 1860) and returned via Caldera, Lima, Panama and Cuba to Southampton on May 12, 1860. During these travels, in between, and during the short time following his return to the time of renouncing his position in Halle, Burmeister published without interruption and managed to produce the main publications on both his travels.

Evidently, Burmeister had previously decided while abroad to give up his earlier style of existence. After unpleasant negotiations, he applied (April 17, 1861) for his dismissal which was granted May 13th in an obliging note. "Er ging, weil er nicht bleiben wollte." Selecting a successor, he thought only of the museum, not of the evolution of his field. He wrote to his dean: "Ich bin gegen die Besetzung der Vacanz durch einen Zoologen aus der modernen physiologisch-morphologischen Schule, wie sie durch . . . v. Siebold, Leuckart, Leydig, Gegenbaur . . . vertreten wird." Although a man like Leuckart was available, Chr. G. A. Giebel (1820-1881) who had already taken Burmeister's place during the long travels abroad, was appointed (January 8, 1862). By this act, the modernization of zoology at Halle was delayed for 20 years.

THE SCIENTIFIC WORK MENTALITY

Some modes of Burmeister's conceptual thinking, whether in his youth or throughout his life, are of interest biographically and concerning the history of science. With respect to his position on the theory of descent there seems at first glance to exist a contradiction. On the one hand, he denied the transformation of species; on the other, he comprehended nature as a process for which he used the term "evolution." Characteristic of his realistic way of thinking, not only did he ask for the beginning of this evolution but also—which seldom happens—for the end of it. Regarding the beginning, spontaneous generation (Archigonie) is assumed. The end, however, is said to be already reached "wir befinden uns am Ziel." "evolutionistisch" of original forms, of higher and lower types, of "Durchgangsgruppen" with mixed characters, and also that the evolution might not be simply linear. The resolution of the supposed contradiction is simple. Burmeister conceived the evolution of organisms as a technical evolution, an evolution of vehicles, for instance, and a technical evolution may also be

described, in extension, with the terms of a biological evolution. In agreement with the "Gesetz des Fortschritts," the assumed evolution should have taken place in several higher and higher steps, forming one after the other but independently of each other.

This concept of steps of evolution became, consequently, an element of the systematizing he frequently discussed and defended between 1830 and 1840. As was previously mentioned, he propagated a "natürliches" system, in the arranging of which it would be necessary to free oneself from the dictatorship of a single character and to find "Affinitäten" intuitively and according to one's own opinion. "Der wahre Naturforscher wird es verstehen . . . die Formen in ihrer Wahrheit zu erschauen,⁴ ehe er nach den Gründen für dieselben sich umsieht." The natural system "taugt daher weniger für Anfänger und bleibt immer ein mehr geistiger Genuß für die in das Wesen der Naturkörper eingeweihten Forscher."

In relating the theory of evolutionary stages with systematization, the young Burmeister proposed two curious theories. First, he stated "Die neuere Systematik hat es sich zur Aufgabe gemacht, die Entwicklungsstufen in der Reihe der organisierten Wesen nachzuweisen . . .", which means to determine their number and sequence. Only in such a way is this strange 6th thesis of his dissertation to be understood: "Die Insekten müssen im Tierreich vor den Mollusken eingereiht werden."

The second theory concerns the "Grosseinteilung" of the animal kingdom as well as certain morphological and developmental themes. It derives from the "Naturphilosophie" of Schelling and Oken (Burmeister himself cites these names). Today, we can only wonder at this philosophy, we cannot reproduce it. After having rid himself—as energetically as ever—of the dictatorship of the single mark of distinction, he inflicts on himself, with habitual consciousness, the compulsion of a scholastic-romantic mysticism of numbers. He referred to the "Zusammensetzung der tierischen Organisation aus vegetabeln, Bewegungs- und Empfindungsorganen." He thus comes up with a rule of three from which he deduces that the animal kingdom must be divided into three groups (Gastrozoa, Arthrozoa, and Osteozoa), that metamorphosis must consist of three stages, and the insect body must show three sections. And, according to the "Gesetz der Wiederholung" (see Oken, Meckel, Fritz Müller, Haeckel), the larvae of insects correspond to the annelid stage and the pupae to the crustacean. With all this, he emphatically stated not only to have fathomed, to have comprehended, and to have explained "das Innerste der Natur," but to have proved it to be necessarily so. Twenty years later, in the "Zoonomischen Briefen" (1856), all romanticism had vanished. All this, the coexistence of sheer empiricism and roman-

⁴ When classifying the Paussidae into the group Adephaga (1841), this way of looking has proved true. With the Rotatoria, however (1857), as well as the mouth-parts of insects and the wingless parasitic insects, it had led him to confusion.

ticism, the appearance of a romantic element as scientific method and the possibility of its vanishing, remains unintelligible to a certain degree.

THE EDUCATIONAL WORK

In Berlin, Burmeister was a grammar school teacher and a Privatdozent. Thus, some instructional books are among his first works. He soon replaced a *Lehrbuch der Naturgeschichte* (1830) with no less than 600 pages by his *Grundriss der Naturgeschichte* with only about 200 pages, which went through (1833–1867) 10 editions and in 1852 was translated into Russian. Evidently each of the three areas of natural history were to be presented. Also, the much more voluminous *Handbuch der Naturgeschichte* (1836/37, 858 pages), meant for use at lectures is, on the whole, a systematic treatment of the three kingdoms. It is weakened by gross simplifications and by the scholastic romanticism I have just discussed. The *Zoologische Handatlas* contains the illustrations of the zoological sections of the mentioned books (117 pages of text and 42 plates, 1835–1843; 2nd edition by Giebel 1858–1860). In this, Burmeister is in his element. The mostly very fine plates stress vertebrates and well-known insects, as usually, but all groups of animals are considered. His *Geschichte der Schöpfung. Eine Darstellung des Entwicklungsganges der Erde und ihrer Bewohner* is meant for the “Gebildeten aller Stände.” Between 1843 and 1872 it went through no less than 8 editions (with an average of 500–600 pages) and was translated into several languages. Burmeister’s *Geschichte der Schöpfung* and Haeckel’s *Natürliche Schöpfungsgeschichte*—the latter appearing in 1868 when Burmeister’s *Geschichte* was in its 7th printing—are typical phenomena of their time and are very similar, apart from the fact that Haeckel, as the apostle of Darwin, had been much more successful than Burmeister. The *Geologischen Bilder* (1851–1855) and the *Zoonomischen Briefe* (1856) appeared relatively late; I shall refer to them later. Burmeister repeatedly recommended all these books as a whole, as a well-planned, many-sided material of instruction.

THE *Handbuch der Entomologie* / ENTOMOLOGICAL PAPERS

The first volume of the *Handbuch der Entomologie* (1832) with close to 700 pages, is the book which made Burmeister famous at one stroke and placed him in the forefront of all entomologists and zoologists. The author was 25 years old and this work of his youth became the essence of his everlasting reputation as entomologist.

Information about the historical position of Burmeister’s “Handbuch” may be taken from the “Handbuch” itself, from the chapter in the first volume entitled *Geschichte der vornehmsten Systeme*, and from the list of literature in the second volume. Though forgotten today, the old book of J. N. Eiselt, *Geschichte, Systematik und Literatur der Insektenkunde, von den ältesten Zeiten bis auf die Gegenwart* (1836) is still most useful.

The first volume, which appeared 140 years ago, is an entity in itself and is comparable to a textbook of general entomology. It is an imposing work and the entomology of a trained biologist. Its disposition is a learned, pure theoretic order. The Englishmen, Kirby and Spence, began with the relation of insects to man. Burmeister's entomology elevated to the rank of a science that which was considered only a hobby by some people. His book was a real scientific instrument for methodical advances. It was critical and independent, had the attraction of a panorama, was needed at a time when the making summarizations and order out of accumulated details was being pursued, and it was brilliantly written.

The famous work of Kirby and Spence, *An Introduction to Entomology* was already in print when the *Handbuch* appeared. The former was composed of four volumes written in the form of letters, and reprinted in several editions (1st edition, 1815–1826). There was also an almost complete translation into German (1823–1833 under the care of Oken). Burmeister admired the Kirby and Spence book and recommended it to his readers. The French just obtained their *Introduction à l'Entomologie* by Lacordaire in two volumes (Vol. 1, 1834, Vol. 2, 1838). All the more astonishing is the resonance which Burmeister received, and the fact that his first volume was translated into English as early as 1835–1836 by W. E. Shuckard.

The second volume perhaps still called forth such an echo. The volume which began the "Besondere Entomologie" with the "Rhynchota" in 1835, the "Orthoptera" in 1838 and the "Neuroptera" in 1839, was directly useful because of its keys to genera. But, how to master in the same way the large orders of insects remained uncertain. Burmeister was by no means engaged only in the *Handbuch*; a glance at a list of his works attests to this fact. Indeed, under the title, *Handbuch der Entomologie*, he published three additional volumes containing more than 2500 pages. The latest was not the 5th volume (1847) but the second section of the fourth, not published until 1855. The contents, however, have little to do with the title. The three volumes are a description of his large collection of Lamellicornia with their numerous species. Though he renounced a monographic treatment he did not finish it. In the prefaces he describes this gigantic product as the continuation of the "Besondere Entomologie" and as a first contribution to the order Coleoptera. He frequently interrupted himself by writing other works, by his political activities, and by the sojourn in Brazil. Finally (1861), by leaving his post, he also left this work. Thus, the *Handbuch*, too, remained a torso, which was characteristic of Burmeister's way of working.⁵

There is no space for details. Concerning the first volume, I came across the fact

⁵ Vol. 1. 1832 (696 pages); vol. 2, 1835 (1–396), 1838 (397–756), 1839 (757–1004); vol. 3, 1842 (826 pages); vol. 4, 1. Abteilung 1844 (587 pages), 2. Abteilung 1955 (569 pages); vol. 5, 1847 (584 pages).

(p. 516f) that, already at the beginning of the 19th Century, decapitations and intersections of the "Bauchmark" were sensibly being carried out (Rengger, Treviranus; later on, Burmeister himself), and that the "Umkehrung des Wirbeltierahren" (including the rotation of the first and last segment, the identifying of the vertebrae with hard parts of the segments, and the interpretation of the wings as gills) had been dealt with before Burmeister who accepted all this (p. 470-77) and presented it as proven reality.

The system of the second volume is of general interest as well. In this, he introduced many terms still in common use, among them such expressions as Hemi- and Holometabola (for Insecta Ametabola and Metabola Leach). Not everything that is seemingly unacceptable to us is based on the insufficient knowledge of his time. Fitting the Trichoptera and Planipennia, known to Burmeister as holometabol, into the "Hemimetabola" shows his most self-willed conceptions of the requirements of a natürliches system. Since his dissertation, Burmeister considered the masticating mouthparts in the higher, and the sucking parts in the lower rank. Still in 1840, he judged the wingless parasites to be primitive because of the absence of wings. Taken in detail, he did not always have the same system; at times he criticized the concepts of a colleague without mentioning that formerly he, too, had held the same opinion (Dermaptera).

Specialists have had to evaluate the three volumes of Lamellicornia.

In addition to the first and second volumes, a thin book of plates appeared (4°, not 8° as the *Handbuch*) which contains 16 plates belonging to the first and two to the second volume. The *Genera insectorum* were to be the picture work of the entire *Besondere Entomologie*. They are a pretentious, expensive collection "unübertroffener Tafeln" (Germar), which Burmeister published in a perfectly unsystematic sequence from 1838 to 1846. These plates are an ambitious counterpart of the likewise very handsome presentations of the great plate work of John Curtis's *British Entomology* . . . (1823-1840, 16 volumes, 770 plates). After 10 issues with 40 plates altogether, the "genera insectorum" broke down as had the entire *Handbuch*. He reacted (1840) overly sensitively to the extensive *Histoire naturelle des insectes Orthoptères* by Audinet-Serville, published in 1839 shortly after the second volume of the *Handbuch* appeared. On the first 17 pages of his commentary (of more than 80 pages), he discussed with welcomed clarity the strange principles of his way of systematizing. The *Berichte über die Fortschritte der Entomologie* 1835, appear as studies to the *Handbuch*. These and his journal (see below) are of historic interest and characteristic of his censoring manner when expressing himself about others. The *Berichte* were continued by Erichson and Gerstaecker for years thereafter.

We cannot enter into the numerous special entomological papers. His dissertation is particularly characteristic of him as it treats a comprehensive theme, the "Grosseinteilung" of insects.

ZOOLOGY

The early first volume of the *Handbuch* by no means introduced an entomological period in Burmeister's life, but soon stood within the continuity of an invariably quick-witted way of accomplishment in different fields.

Among his zoological publications—apart from those on insects—there are papers on Hydrozoa, Trematoda, Rotifera, Arachnida, Crustacea, and Myriapoda, and among the essays on vertebrates, not only many about birds and mammals, he was also engaged in studies of amphibians (the tree frogs of Brazil). In his paleontological work there are also papers on reptiles.

In his research on Cirripedia published in 1834 while still in Berlin, and in his later treatment of the Trilobita, he established his own system for the Crustacea. Darwin—in 1851 and 1854 in his great monograph on Cirripedia—praised the thoroughness of Burmeister's research. The observations (also published in 1834) on the water mite *Aclysia* associated with *Dytiscus* species, led him to the very essential result that all six-legged mites are juvenile and therefore that "die von Latreille angenommene Abteilung der Hecapoden" is invalid. From the years in Halle I emphasize the wonderful *Tarsius* anatomy (1846); the strikingly unfounded opinion concerning the relationship of the Rotatoria, which in 1857 he still classified at the beginning of the Crustacea; and the *Pterylographie*, edited in 1840 out of the incomplete papers of his teacher and predecessor, C. L. Nitzsch (*Pterylographie* is, in this sense, the science of the number and localization of the feather fields). The *Zoonomischen Briefe*, too, came out in Halle in 1856. They are an unfinished textbook of special zoology (more than 800 pages). Already in Berlin, he had lectured on "Spezielle Zoologie," and the *Briefe* show the extensive reading through which he continuously watched the whole field. Prior to their appearance, the *Lehrbuch der Anatomie der wirbellosen Thiere* of Leuckart (1847), the *Lehrbuch der vergleichenden Anatomie der wirbellosen Thiere* by v. Siebold (1848), and the famous *Anatomisch-physiologische Übersicht des Thierreichs* by Bergmann and Leuckart (1851; 2nd edition, 1855) were already in print.

PALEONTOLOGY

Already in Germany, Burmeister had worked on paleontology and produced several well-known papers: the publications on Trilobita, published in 1843, 1846, and 1848, the two essays on Labyrinthodonta in 1849 and 1850, and the wonderful study "Der fossile Gavial von Boll in Württemberg," 1854, were among these. There are essays, too, on a fossil crustacean (*Gamphosynchus*, 1854) and on species of *Pterodactylus* (1853). The essay on Trilobita of 1843 was translated into English (1846) and is today still a classic. Burmeister considered the Trilobita as Crustacea and placed them near the Phyllopoda and Xiphosura. The latter is still thought to belong to the Crustacea. He opened the treatment of the fossils known as "Gavial von Boll"

with a presentation of present-day crocodiles, reduced the number of species which had been described from this material, and requested that paleontologists describe new species only after having examined the complete skeleton of several individuals, in particular individuals of various ages.

The attempt in 1848/49 to sum up his fields of interest in a separate journal was a failure. The "Zeitung für Zoologie, Zootomie und Palaeo-Zoologie," edited by E. d'Alton and H. Burmeister, was far too personal a "Sprechstunde" and ceased to exist after about 200 pages through lack of subscribers.

TRAVEL REPORTS

Burmeister published the results of his travels to Brazil and Argentina in numerous, partly purely geographical essays, several big works or grandly planned works. The two most central are the *Reise nach Brasilien, durch die Provinzen von Rio de Janeiro und Minas Geraes. Mit besonderer Rücksicht auf die Naturgeschichte der Gold- und Diamantendistrikte* (1853) and the far more extensive "*Reise durch die La Plata-Staaten, mit besonderer Rücksicht auf die physische Beschaffenheit und den Culturzustand der Argentinischen Republik*" (1861). Only recently have both books been published in the native language: the Brazil Travel in 1952 in Portuguese and the La Plata Travel in 1943–1944 in Spanish.

Three additional books about Brazil were begun by Burmeister but never finished. Simultaneously with the Travel Report, he published 11 plates under the title "Landschaftliche Bilder Brasiliens und Portraits einiger Urvölker" which express his talent for drawing. His "Systematische Übersicht der Tiere Brasiliens . . ." of much more than 1200 pages (1854–1856) deals only with mammals and birds. The "Erläuterungen zur Fauna Brasiliens . . .," published almost at the same time (1856), contains, too, only vertebrates (mammals and tree frogs). He dedicated this plate work—32 plates and 115 pages—to H. M. Dom Pedro II, Emperor of Brazil. This eminent, highly educated monarch awarded him, many years later (in 1886), the high decoration of the de la Rosa-Orden.

The *Geologische Bilder zur Geschichte der Erde und ihrer Bewohner* (Vol. 1, 1851; Vol. 2, 1853; 2nd edition, 1855) is a collection of popular occasional essays. The theme of the second volume is based upon impressions received while traveling in Brazil.

In 1854–1855, based on his own observations, Burmeister wrote a sharp critique of M. S. Merian's famous "Metamorphosis Insectorum Surinamensium" (1705).

The La Plata Travel is a work of two volumes with more than 1000 pages. In the preface of Volume 2, he takes leave of his German audience and discusses legendarily the reasons that made him emigrate. Guillermo Schulz, with the assistance of several colleagues, enriched the Spanish edition by a third volume. This volume explains, completes and modernizes (zoology by D. Jurado) the partly antiquated original, and provides it with an index. Burmeister's greatest work on Argentina, *Description physique de*

la République Argentine . . . (see below), was not written until he took up residence in Buenos Aires.

PERIOD: 1861 TO 1892

TO ARGENTINA

Burmeister was 54 years old when he gave up his esteemed position in life, separated from his wife, and left his "beloved" native country never to return. This decision was puzzling to many and the reasons are not to be found in externals, handed over by biographers, but in his character and his exceptional talents. O. Taschenberg, in 1894, saw the true reasons and described them clearly.

For a person energetic to the point of thoughtlessness, the risk was small. Burmeister knew himself and knew the country better than many an Argentinian. In two old friends (see below) he already had two reliable allies. Argentina⁶ was then dependent on a strong influx of European immigrants and was most eager that the struggles connected with consolidation of the state should not hinder this flow. Government officials realized that cultural development, especially the development of the school system and the establishment of higher education, would be a major task. In matters of culture, all presidents were agreed. Burmeister's "Freund und Beschützer" Sarmiento (at first, head of the Department of Education of the Province Buenos Aires, then [1868 to 1874] president of the republic) was the outstanding personality. He was called "der erste Schulmeister Argentinien's." Sarmiento, Burmeister, and the Prussian representative v. Gülich—"... ein Mann, dessen Dienstfeier meine tollkühne Verwegenheit . . . noch überbietet"—were men who resembled each other in essential features.

After the Parisian scholar, A. Bravard, had refused the directorship of the museum in Buenos Aires (he lost his life in Argentina in the earthquake of Mendoza which was also described by Burmeister in 1863), Burmeister's appointment was rather quickly made through the intervention of v. Gülich and the lively interest of Sarmiento and President Mitre (1862-1868). Burmeister arrived in Buenos Aires on September 1, 1861 and received his assignment as Director of the *Museo publico de Historia natural* on February 20, 1862.

Soon after his immigration, Burmeister married a young Tucuman lady whom he had already met during his La Plata travels. The two sons by this marriage, Carlos and Federico, translated their father's La Plata Travel into Spanish. Carlos, born April 1, 1867, became a scientist like his father. The younger Federico had "durch Jahre das Hohe Amt des Direktors des Nationalen Wetterdienstes bekleidet."

⁶ I can mention only a few names out of the extensive historical literature: Fischer Weltgeschichte (Süd-und Mittelamerika, 1969); Friederici (1925/1936); Kirkpatrick (1931); Ricardo Levene (1939); Napp (1876); Quelle (1916, 1941, 1942).

FOR ARGENTINA

Burmeister was a benefit to his adopted country. He was an expert of the German educational system, a famous university professor, and skilled in popularizing knowledge and education. His fame preceded him; he was a prominent scientist, especially prominent as a zoologist and paleontologist and one of the best experts in the country and neighboring Brazil and Uruguay. He was incorruptible and welcomed by the Church in addition to being a man of unusual energy and working capability who had been willing to give up a professorship in Germany in favor of Argentina. He surpassed all expectations. Good scientific work was done by others, too, but the extensiveness of Burmeister's work, its continuity and the wonderful plates with which he endowed it are without comparison in South America. He not only brought prestige to a "ziemlich unbedeutendes" museum, but the reputation of his scientific work and the high honors bestowed upon him by foreign countries, spread the name of Argentina and Buenos Aires over the world.

The abundance of fossils of the pampas formation is the scientific capital of the country. To protect this asset, Burmeister was instrumental in having a law passed forbidding the exportation of fossils. He took part in the life and foundation of scientific societies—by 1864 he initiated the Paleontological Society—and in the first volume of his *Description physique de la République Argentine* . . . (1876) he also dealt with economic matters (in judging the Pampas as an agricultural area, he was entirely wrong).⁷ Important mission, vested with considerable authority, bestowed on him by Sarmiento was the convocation of scientists, preferably German, for founding a scientific academy at the old University of Cordoba. This enterprise ended in a fiasco in a quarrel between Burmeister, the director of the Academy, and the professors who, meanwhile, had arrived. Burmeister resigned, and those who remained were taken over as a second faculty of the University of Cordoba (Lit. cited, Nos. 32, 33, 34).

THE MUSEUM

Burmeister settled down in Buenos Aires and no longer travelled. He, too, pursued the development of collections which he had already seen in 1857, with the help of employed collectors and hunters. From the beginning, he was eager for his independence and freedom of action; he was accountable only to the Minister himself. Already in 1864, he initiated and edited a journal of the Museum which he published in Buenos Aires, Paris, and Halle. With interruptions, it grew to three large volumes. The first two volumes were published under the title *Anales del Museo Publico de Buenos Aires*; the third volume was called *Anales del Museo Nacional de Historia Natural de Buenos Aires*. About 1880, ownership of the Museum passed from the

⁷ R. Napp. Die argentinische Republik. Buenos Aires, 1876, Seite 303–305.

province to the national government. In the 1880's (when, in Berlin, the representative new building of the "Naturkundemuseum" was erected), there was, in Argentina, a time of depression which was not surmounted until 1900. So Burmeister did not live to see the new "Museo Nacional de Historia Natural, Bernardino Rivadavia" in the center of the town, in the Parque Centenario. The old "Naturalienkabinett" which he made into a paleontological museum of world-wide renown, stood at the intersection of Peru and Morena Avenues.

SCIENTIFIC WORK

A COMPARISON

Burmeister's Argentine publications have several characteristics. His verve had possibly continued to increase. Though he had passed the summit of a human life, he was not a tired man and never became one. The list of papers out of the 30 years in Buenos Aires is more extensive than that of the 30 scientific years spent in Germany. He never considered a translation of his earlier works or to write new textbooks. His interest lay in the exploration of the country, he drew from plentiful resources and produced much original research. Almost entirely, he worked at collecting and describing objects and the subjects became more simple. He left behind such works as the *Handbuch der Entomologie* and the volumes of his *Unterichtswerk*, books typical of a German professor. Just as in his earlier years, he preferred to publish in German periodicals, secondly, in English journals. When he owed it to the country, he wrote in Spanish.

At the time of his emigration, German scientific interest had already turned to subjects other than his. He disappeared from the horizon of his German colleagues and left behind no followers who would speak of him. So there, he was remembered only by the work of his youth, by his *Entomologie*. In Argentina, on the contrary, his systematic approach exactly met the basic needs of a new country. Here, "war er nicht nur sein eigener Herr, sondern stand als Ausländer und als Mann der Wissenschaft in hohem Ansehen und galt als Autorität." He attained the rank of a personality, to which the country and the Germans of South America rendered great remembrance.

IN BUENOS AIRES

Probably the best bibliography⁸ (which was unavailable to me), contains 105 titles for the German years and 171 for the Argentine years. Fundamentally new themes were not added, only the emphases had shifted a little. Stress now lay on the geographical (and meteorological⁹) but espe-

⁸ In: Memoria de la Comision del Monumento a Burmeister. Buenos Aires, Belgrano 463, 1903, L. F. Rosso.

⁹ e.g., "Ueber das Klima der Argentinischen Republik." *Abh. Naturf. Ges. Halle*, Band 6, p.; 1-110 (1861) 1862.

cially on the paleontological works which treat the fossils of the Pampas-formation and which made the museum world-renowned.

Three of the papers are outstanding for their size: the "Mamíferos fosiles" ("*Anales*," vol. 1, 1867/68, pp. 87-311); the "Monografía de los Glyptodontes in el Museo publico" ("*Anales*," vol. 2, 1870, pp. 1-355); and the representative "Los caballos fosiles de la Pampa argentina," published on Burmeister's recommendation for the Sixth International Exhibition in Philadelphia in 1876.¹⁰

I would like also to mention his report, published in 1868 in the "Abhandlungen der naturforschenden Gesellschaft zu Halle," on the skeleton of a sabretoothed tiger (*Machaerodus*) found near Buenos Aires.

New is the relatively large number of papers on whales and Pinnipedia. The Chlamydephorinae, belonging to the Dasypodidae, are famous rarities among the recent mammals of South America. We know only two species, one of which was described by Burmeister in 1863 (*Chlamyphorus*, now *Burmeisteria retusa*).

Entomology, as always, is represented by numerous systematic essays. Again, the Coleoptera distinctly take first place over the Lepidoptera, Hymenoptera, and Orthoptera. Over the years, Burmeister compiled the Argentine species, chiefly for many families of beetles. In 1878-79, he again produced a large entomological work (again unfinished) as voluminous as the Lamellicornia volumes which he had abandoned. This time it was the beginning treatment of Argentine Lepidoptera, a work of 526 pages and 24 plates.¹¹

This "Lepidoptera" treatment comprised the fifth volume of his extensive research in Argentina, and was not published until he was in his eighties. The title of this boundless undertaking is "Description physique de la République Argentine d'après des observations personnelles et étrangères,"

¹⁰ F. Ameghino (1853-1911, since 1902 director of the museum), too, was a passionate explorer of the Pampas fossils. A complete edition of his works (15 volumes, 1913-1934) was published by government order. See also Carlos Rusconi, *Animales extinguidos de Mendoza y de la Argentina*. Edision oficial, Mendoza 1967.

Burmeister had contested Ameghino's conception that certain South American fossils had something to do with the ancestors of man.

¹¹ Burmeister's successor and biographer, Carlos Berg, has made a list of all (75) entomological titles in: *Ann. soc. ent. France*, Volume 63, 1894, 705-712. The two following papers give information about the newer entomological literature of Argentina:

Carlos Lizer, *Primer ensayo bibliográfico de Entomología Argentina*. In: *Prim. Reunion nac. Soc. Argent. cienc. nat.*, Tucuman 1916. Buenos Aires 1918/19, pp. 351-380.

Carlos A. Lizer y Trelès, *Apuntaciones para la Bibliografía entomológica Argentina*. In: *Physis* (Revista Soc. argent. nat. Buenos Aires), Tomo VIII, No. 31 (15. Nov. 1927), pp. 505-535.

1876-1886. The body of the writing, illustrated with a variety of plates, contains the history of the discovery, the geography, and the climatology of Argentina and, in addition to the Lepidoptera, a first part to the mammals. He dedicated the first volume (1876) to his "protecteur et excellent ami," Domingo Faustino Sarmiento. The fourth volume was lost.

FRITZ MÜLLER

Among the biologists who lived and worked in South America side by side with Burmeister, Fritz Müller-Desterro (1822-1897; in Brazil from 1852) in any case should be mentioned, not because of his excellent work and the honors he received, but because of the contrast between the two personalities. Although they had the same education, dealt with the same subjects and lived near each other, they operated very differently. Burmeister was a man of the world, confident, pretentious, demanding, and a pure empiricist. Fritz Müller, modest and reserved without collections or books, was a meditating observer who made many contributions to the famous work of his brother, Hermann Müller ("Die Befruchtung der Blumen durch Insekten," 1873).¹²

THE END

Burmeister became the victim of an accident which occurred in his Museum on February 8, 1892. He fell from a ladder into the glass of a showcase, severely injuring his face and suffering a considerable loss of blood. This was the cause of his death which occurred months later in his home (at the intersection of Belgrano and Cevallos Avenues). "*Ses forces diminuèrent de jour en jour, et, en pleine connaissance, avec résignation et courage, il atteindit le moment du repos éternel, qui arriva le 2 mai 1892*" (C. Berg, 1894). Previously, he had asked to retire and proposed as his successor his disciple and collaborator of many years, Professor Dr. Friedrich Wilhelm Karl (Carlos) Berg (1843 (Kurland)-1902; at the Museum from 1873). Burmeister's proposal was accepted and on April 18th, shortly after his 85th birthday and just prior to his death, Burmeister resigned his office. His burial, which took place on May 4, 1892, was a state funeral.

Burmeister received many honors. "Die Feier des 50-jährigen Doctorjubiläums des Prof. Dr. Hermann Burmeister, begangen den 19. December 1879 in Buenos Aires" was a festival which he himself described in detail under the above-named title (in a booklet of 38 pages). The numerous honorary degrees from academies and scientific societies, the renewal of his doctor diploma, the congratulations of his native town, Stralsund, and the "Kronenorden 3. Klasse" awarded to him by King Wilhelm the First of Prussia, exemplify the eminent esteem in which he was held, including the

¹² E. Haeckel himself always acknowledged that the so-called "Biogenetisches Grundgesetz" was stated already by Fritz Müller. Alfred Möller: Fritz Müller; Werke, Briefe und Leben. 3. Band, Jena 1920.

native country which he had left. Evidently he was considered to be one of the prominent "Auslandsdeutschen" who were of diplomatic interest.

On the occasion of his 80th birthday (1887), Halle again commemorated him with an essay by the Editor, Dr. Karl Müller, of the journal *Die Natur* (published in Halle). Müller, in his youth, had attended Burmeister's lectures.

Upon Burmeister's death, the government of his adopted country gave him a state funeral by a decree of May 3, 1892. The President of the Republic, Pellegrini, and his ministers accompanied the coffin and held its cords.

According to Carlos Berg in 1895, Burmeister was an honorary member of eight scientific societies, corresponding member of seventeen, and active member of an additional eighteen. More than 50 species or genera have been named after him. The "Horn-Schenkling" and the "Derksen-Scheidung" registered the obituaries which were dedicated to him throughout the world.

On the occasion of his doctor jubilee, the Sociedad científica Argentina presented to him a more-than-life-sized bust on a pedestal of rosewood and, with the permission of the government, placed it in his museum. Some years after his death, on October 7, 1900, a monument was unveiled in the Parque 3 Febrero on the bank of the Rio de La Plata which immortalizes his figure enthroned on a high pedestal. After the completion of the new museum, this monument was transferred there to the Parque Centenario. And, on the occasion of the 75th anniversary of his death (May, 1967), "wurden die sterblichen Überreste des grossen Gelehrten in einer Urne nach dem Museum überführt." The occasion was marked by the presence of the German ambassador and prominent personalities of cultural life. "Seine letzte Ruhe sollte Burmeister im Hause seines Wirkens finden" (Tepp, 1967). Here is also a "Burmeister-Saal," and in the town (Thames 2246) there is a "Burmeister-Schule."

To my knowledge, days of remembrance were held only by Argentinians or "Auslandsdeutschen," not by Germans in Germany. To the latter, he remained the entomologist and the author of the long-antiquated "*Handbuch*." All of the commemorative papers I saw are unknown in Germany. The 50th anniversary in 1942 was commemorated by a special edition of the "Boletín de la Asociación del Profesorado Aleman en la Argentina." Dr. C. I. De Ferrariis recollected the day (September 1, 1861) when Burmeister came to Buenos Aires to take over the post of director of the museum. A number of commemorative papers appeared in 1957 (some in 1958) on a dual occasion: 150 years ago (January 15, 1807) Burmeister was born, and 100 years ago (January 31, 1857) he had first set foot on the soil of Buenos Aires (on the occasion of the La Plata Travel). Three papers (23-25 in the literature cited) honor Burmeister as a geographer, zoologist, and a botanist. There is also the great essay by Wilhelm (Guillermo) Schulz (Ref. 30) which appeared as a series beginning on January 15, 1957 in the "Freie Presse," a

newspaper of Buenos Aires. At the end of 1957, it was also printed in an abstracted form in the "Mitteilungen des Instituts für Auslandsbeziehungen" in Stuttgart.

ACKNOWLEDGMENT

I am obliged to Mr. Riedmann (Ibero-Amerikanisches Institut, Berlin) for information about important literature.

LITERATURE CITED

In the text I mentioned the most important papers. The lists of C. Berg (1895) or O. Taschenberg (1893) are indispensable; each of them contains about 225 titles.

1. Über die Gattung *Aclysia* Aud. Isis (Oken), 1834 138-142 Leipzig 1834
2. Bericht über die Fortschritte der Entomologie im Jahre 1834. Arch. f. Naturgesch., 1 (2) 7-74 1835
3. Bericht über die Fortschritte der Entomologie im Jahre 1835. Arch. f. Naturgesch., 2 (2) 293-327 1836
4. Audinet-Serville, Histoire naturelle des Orthoptères, Paris 1839. verglichen mit H. Burmeister, Handbuch d. Entomologie II. Bd. 2. Abth. 1. Hälfte (vulgo Orthoptera), Berlin 1838, vom Verfasser des Letzteren. Germars Zeitschr. f. Entomol. 2 1-82 1840
5. Observations sur les affinités naturelles de la famille des Paussidae. Magas. de Zool. (Guérin), 2. Ser. 3. Anné 1841, 15 Seiten. Ref. in Ann. Soc. ent. France 10 1841, Bull. Seite XXXI-XXXIII
6. Über M. S. Merians "Metamorphosis Insectorum Surinamensium." Abh. naturf. Ges. Halle, 1 1853 3. Quart. Seite 46 (1854) und 2 1854 Sitzungsber. 58-65 1855
7. Noch einige Worte über die systematische Stellung der Räderthiere. Zeitschr. f. wiss. Zool., 8 152-158 (1856) 1857
8. Reise nach Brasilien, durch die Provinzen Rio de Janeiro und Minas Geraes. Mit besonderer Rücksicht auf die Naturgeschichte der Gold- und Diamantendistricte. VIII + 608 pages, 1 map; G. Reimer, Berlin 1853
9. The same in Portuguese, translated by M. Salvaterra and H. Schoenfeldt: Viagem ao Brasil através das provincias do Rio de Janeiro e Minas Gerais. Visando especialmente a Historia natural dos distritos auri-diamantiferos. ("Bibliotheca historica Brasileira" Nr. XIX). 341 pages, many pictures; Livraria Martins Editora S. A., Sao Paulo 1952. Report by R. Peschke in "Serra-Post" Kalender 1958 167-181, Ulrich Löw, Rio Grande do Sul, Brazil
10. Reise durch die La Plata-Staaten, mit besonderer Rücksicht auf die physische Beschaffenheit und den Culturzustand der Argentinischen Republik. Ausgeführt in den Jahren 1857, 1858, 1859 und 1860. 1. Band: Die südlichen Provinzen umfassend. VI + 504 pages, 1 map, 1 (lith.) Titelbild. 2. Band: Die nordwestlichen Provinzen und die Cordilleren zwischen Catamarca und Copiapo umfassend. Nebst einer systematischen Übersicht der beobachteten Rückgraththiere. VI + 539 pages, 1 map. H. W. Schmidt, Halle 1861
11. The same in Spanish, translated by Carlos and Federico Burmeister, edited by Guillermo Schulz: "Viaje por los Estados del Plata . . .," Buenos Aires, Unión Germánica en la Argentina 1. Band: XXIV + 521 pages 1943, 2. Band: IX + 567 pages 1944, 3. Band: ". . . comprende los Agregados del editor para actualizar la obra original del Doctor Hermann Burmeister," XII + 372 pages 1944
- The same, volume 2, chapters XXV-XXVIII (1861); translated into Spanish by C. Wessel, edited by the University of Tucuman under the title "German Burmeister, Descripcion de Tucumán"; with a biographical prologue by A. Gallardo. 113 pages, Coni Hermanos, Buenos Aires 1916
12. Berg, Carlos: Notice nécrologique sur le docteur Hermann Burmeister. With portrait and list of Burmeister's entomological papers. Ann. soc. ent. France 63 705-712 1894
13. Berg, Carlos: Carlos Germán Contrado Burmeister. (With portrait and list of works.) Anal. Mus. nac. de Buenos Aires, 4 (2. Ser. 1) 315-357 1895
14. Burmeister, Carlos and Federico: Prólogo de los traductores Carlos y Federico, hijos sobrevivientes del Dr. Burmeister. (With portraits.) In "Viaje por los Estados del Plata . . ." (s. Nr.11), 1 Band, pages IX-XVIII 1943

15. Müller, Karl ("K.M."): Hermann Burmeister. Die Natur (Halle), 36 (N.F. 13) 136-138 1887
16. Taschenberg, Otto: Karl Hermann Konrad Burmeister. (With list of works.) Leopoldina (Amtl. Organ der Kaiserl. Leopoldinisch-Carolinischen Deutschen Akademie der Naturforscher zu Halle), 29 1893 43-46, 62-64, 78-82, 94-97 1893
17. Taschenberg, Otto: Geschichte der Zoologie und der zoologischen Sammlungen an der Universität Halle 1694-1894. Abh. naturf. Ges. Halle, 20 1-177 1894
18. Memoria de la Comision del Monumento a Burmeister. (Contains a list of works with 276 titles.) Buenos Aires, Belgrano 463, 1903, L. F. Rosso
19. Carus, J. Victor und Engelmann, Wilhelm: Bibliotheca Zoologica. 1. Band: X + 1-950. 2. Band: XXIV + 951-2144; W. Engelmann, Leipzig 1861
20. Hagen, Hermann August: Bibliotheca Entomologica. 1. Band: XII + 1-566 1862, 2. Band: 1-512 1863. W. Engelmann, Leipzig
21. Horn, W., und Schenkling, S.: Index litteraturae entomologicae. Serie I: Die Welt-literatur über die gesamte Entomologie bis inclusive 1863. 4. Band. XXI + 1426 Seiten (S. 157); Berlin 1928-1929
22. Derksen, Walter, und Scheiding, Ursula: Index litteraturae entomologicae. Serie II: Die Welt-Literatur über die gesamte Entomologie von 1864-1900. Band 1 (A-E) Seite 398, Berlin 1963
23. Furlong, Guillermo, S. J.: Bürmeister como Geógrafo. Anal. Acad. Argent. Geografía, 1957 (num. 1) 104-109 1957
24. Liebermann, José: Bürmeister como Zoólogo. I. c. 110-113 1957
25. Burkart, Arturo: Burmeister como botánico. Revista de la Universidad (Publ. Univers. Nac. la Plata), 4 89-95 La Plata 1958
26. Diaz, Abel Sánchez: "Burmeister: Trabajo y Sabiduria," Anal. Acad. Nac. Cienc. exact. físic. y natural. de Buenos Aires, 13 117-120 1958
27. Ferrariis, De, C. I.: El Dr. Carlos German Conrado Burmeister. Anal. Comis. Investigat. Cientif. La Plata, 2 383-386 1961
28. Tepp, M.: Gedenkstunde für den deutschen Gelehrten Hermann Burmeister in Buenos Aires. Der deutsche Lehrer im Ausland (München), 14 (Nr. 10) 277-278 1967
29. Schulz, Guillermo: Bürmeister, su vida y sus viajes por los Estados del Plata. Anal. Acad. Argent. Geografía, 1957 (num. 1) 100-103 1957
30. Schulz, Guillermo: Hermann Burmeister—Ein deutscher Naturforscher in Argentinien—Zur 150. Wiederkehr seines Geburtstages. Inst. f. Auslandsbeziehungen, Stuttgart, Mitt. 7 (Nr. 4) 296-306 1957
31. Schulz, Guillermo: Karl Hermann Burmeister, un gran Naturalista. Humboldt (Übersee-Verlag, Hamburg), 5 (Nr. 18) 50-56 1964
32. Burmeister, H.: Resena historica sobre la fundacion y progresos de la Academia de Ciencias Exactas en Cordova . . . Bol. Acad. nac. cienc. exact. en Univ. Cordova; Argentina, Buenos Aires. 1 1-29 (s.a. 30-35, 87-89, 96, 294-296, 503-508 1874
33. Sellack, Carl Schultz: Die naturwissenschaftliche Facultät Cordoba in Südamerika. 8°, 16 pp., Berlin 1874
34. Leguizamón, Pondal, M.: Sobre la historia de nuestra Academia. Publ. Misc. 34 Acad. nac. cienc. en Cordoba, Argentina. 9 pp. ilustr. (con retrato de Burmeister), Cordoba 1957