

Joaquim Mateu (1921–2015), an entire life dedicated to the study of insects

X. Bellés

Bellés, X., 2015. Joaquim Mateu (1921–2015), tota una vida dedicada a l'estudi dels insectes. *Animal Biodiversity and Conservation*, 38.1: 139–145.

Joaquim Mateu Sanpere was born in Barcelona on January 9, 1921 within a wealthy family of the Catalan bourgeoisie of the early twentieth century. His parents were Cristòfol Mateu Ferrer and Teresa Sanpere Cantelis, and the family had an illustrious ancestor, the historian, critic and politician Salvador Sanpere i Miquel, the father of Teresa Sanpere who had died in 1915. Joaquim was the second of the couple's four children: Eduard had preceded him, while Josep and Elena were born after him.

As a child, Joaquim Mateu studied at the school *Sant Joan Baptista de La Salle*, in the Gracia district of Barcelona. However, as he describes in unpublished autobiographical notes, during his adolescence he had poor health, afflicted with asthma and bronchitis, which forced him to spend long periods at home, where he occupied most of his time reading, often books on natural history and travels. It was in this way, perhaps, that his vocation as a naturalist and traveler might have started. From a young age, he struck up a close friendship with Felip Ferrer i Vert, who had been vice president of the *Institució Catalana d'Història Natural* and, at the *Plaça Reial* of Barcelona, had a taxidermy establishment, especially centered on birds, although also showing butterfly collections. The back shop of this unique establishment served as a meeting place for young people to talk about natural history, often about insects on which Ferrer i Vert was well acquainted. Until a very old age, Mateu remembered the endearing hospitality that he always received from the Ferrer family, the pleasure of those gatherings and the knowledge that they provided him. However, his formal entry into the field of entomological research took place through the *Museu de Zoologia* of Barcelona.

From Barcelona to the Sahara and to Almería (1940–1956)

In 1940, Mateu contacted the *Museu de Zoologia* of Barcelona, specifically the section of entomology then headed by Francesc Español. This first meeting would be the beginning of a great friendship that would last until the death of Español in 1999. However, two years after that first contact, in November 1942, Mateu began his military service, which extended until June 1945. A military service that was exceptional, since, thanks to his knowledge of natural history, he was able to convince the military authorities to be posted to North Africa as a naturalist attached to the government of the territory Ifni–Sahara, then belonging to Spain. Relieved of military duties, he was able to concentrate on studying the natural history and prehistory in these territories. Surveys were concentrated in the regions between the Oued Dráa, in the north, and the Agüera in the south, in the Spanish territories of the Sahara and Rio de Oro. The discovery of the majestic desert landscape immediately fascinated him, a fascination that lasted throughout his entire life. This represented his first encounter with the Saharan fauna of insects, often found in the tortured branches of acacia trees scattered here and there, sometimes in the most hostile places, but that concentrate much of the biodiversity of the area. This experience would be followed by a long and fruitful research dedication, as discussed below. It will also represent the discovery of the second vocation of Mateu: the study of African prehistory, to which he devoted much of his spare time, producing a significant number of publications.

Xavier Bellés, Institut de Biologia Evolutiva (CSIC–UPF), Passeig Marítim 37, 08003 Barcelona, Espanya (Spain).
E-mail: xavier.belles@ibe.upf-csic.es

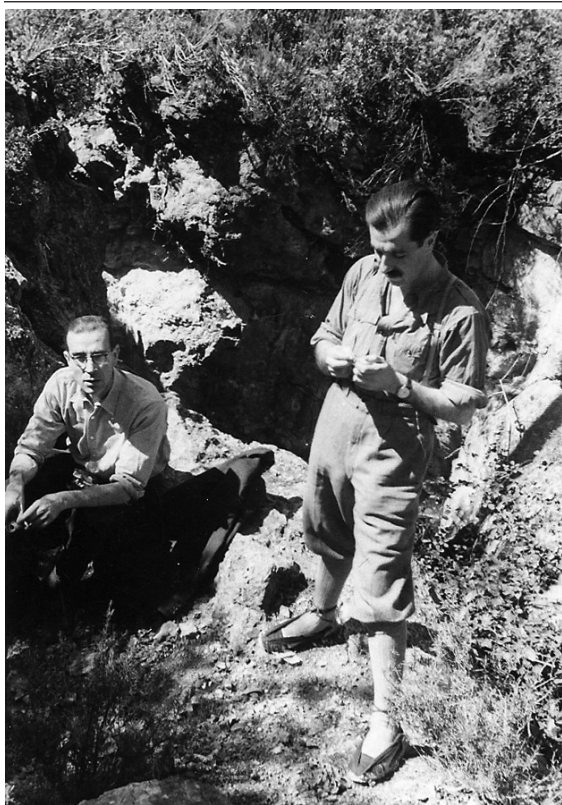


Fig. 1. Joaquim Mateu (right) with Francesc Español about to explore the *Avenc d'Olèrdola*, in the Alt Penedès, Barcelona, 1946. Photo: Joaquim Mateu.

Upon completion of his military service, Mateu returned to Barcelona and, stimulated by F. Español, he discovered the world of speleology, so that in August 1945 he joined a biospeleological campaign in the Basque Country sponsored by the *Instituto Español de Entomología* of the CSIC. Thus, accompanied by F. Español, Nadal Llopis and Ramon Margalef, he explored several caves in the Sierras of Aralar and Hernio. His interest in troglotic fauna led him to visit many caves in Catalonia, and in 1946, for example, we find him accompanying Español in the exploration of the *Avenc d'Olèrdola*, in the Alt Penedès, Barcelona (fig. 1). That same year, 1946, Mateu was appointed as tenured scientist in the CSIC, attached to the *Instituto Español de Entomología* in Madrid, then headed by Gonzalo Ceballos. It would be a nominal appointment, since in fact he really based his work in the *Museu de Zoologia* of Barcelona with his friend F. Español. However, two years later, in 1948, he would be attached to the *Instituto de Aclimatación*, in Almería, then headed by Manuel Mendizábal, where Mateu finally moved. Sponsored by the CSIC and the *Instituto de Estudios Africanos*, between March and August 1948, he participated in an expedition directed by Santiago

Alcobé to the Spanish Guinea and Fernando Poo, and at the end of it he continued alone in the same territories until the end of November 1948. Three years later, and with the sponsorship of the *Instituto de Aclimatación*, he returned to the Sahara to develop collecting campaigns in the central and northwestern areas between March and April 1951, using the *Centre national de Recherche sur les Zones Arides* in Béni Abbés, as a base, and accompanied by his colleague Franklin Pierre; later, between April and June, and alone again, he prospected the Hoggar Massif (fig. 2). After returning from this Saharan expedition, in July 1951, he carried out faunistic prospections in Sierra Nevada with his friend Antonio Cobos, from the *Instituto de Aclimatación*, and with their French colleagues Albert Vandel, Jean Sermet and Guy Colas; in February and May of 1952 he traveled to the Canary Islands (Gran Canaria, Tenerife, Gomera, Hierro and Lanzarote) with Georges Pécoud; and in July 1952 he did entomological surveys in the Serranía de Ronda and Benaojan, including visits to several caves, accompanied by A. Vandel, Henry Coiffait and Jacques Nègre, the latter to become one of his best friends in life. By the fall of 1953, he completed a new campaign in Sierra Nevada and Las Alpujarras sponsored by the *Instituto de Aclimatación*, also accompanied by A. Cobos and several French colleagues; between June and August 1954 he did prospections in Tenerife, Gran Canaria and La Gomera, and in the coast and sublittoral zone of Western Rif, in Northern Africa; and the following year, between January and June 1955, he worked in the islands of Cape Verde, Madeira, Porto Santo and the Azores.

As we have seen, in these campaigns Mateu is often accompanied by French colleagues, thus beginning to establish stable relationships of cooperation and friendship with naturalists of his neighbor country. These relationships were strengthened during 1950 and 1951 when the CSIC gave him a travel grant to work in the *Laboratoire d'Entomologie* of the *Muséum national d'Histoire naturelle* in Paris, directed by René Jeannel first and then by Lucien Chopard. He stayed there for nine months, with a break to develop the campaign in the Sahara mentioned above, and the other to participate in the *IX Congrès International d'Entomologie*, held in Amsterdam in 1951. He returned to the *Laboratoire d'Entomologie* of the Paris Museum in July 1953, taking advantage of the trip to participate in the *I Congrès International de Spéléologie*. During this period, and concerning scientific meetings, he contributed to the first two editions of the *Congreso Internacional de Estudios Pirenaicos* invited by his friend Enrique Balcells, the first held in San Sebastián (Spain) in 1951 and the second in Luchon-Pau (France) in 1954.

In the 16 years from 1940 to 1956, Mateu published 42 articles of entomology, which represents an average of two or three per year. This is a remarkable productivity if we consider that this is the initial period of his research career, and that the period includes a long military service where work was focused on field tasks. A remarkable productivity, then, under these circumstances, and a very mature content of

the contributions published. His first paper was a review of the Iberian *Steropus* co-authored with F. Español, which appeared in 1940. This work initiated a long history in the study of carabid beetles, of which he would become one of the world's most respected specialists. Without leaving the carabid family, he also published the first work on Lebiinae subfamily, one of Mateu's favorite groups, of which he would become an outstanding specialist. Also from this period are the first notes on cave beetles, the earlier papers on the fauna of the Sahara and the Atlantic Islands, and the results of the first campaigns in Sierra Nevada.

The long Parisian period (1956–1987)

The year 1956 was crucial in the life and career of Mateu, as he obtained a position as *Attaché de recherches* in the French CNRS, and moved to Paris to work in the *Laboratoire d'Entomologie du Museum national d'Histoire naturelle*, then under the direction of Eugène Séguy. In Paris, he spent more than 30 years of his life. In the early Parisian times, he kept his original interest in the fauna of the Atlantic Islands, and between March and May 1957 he visited the island of Madeira in an expedition organized by A. Vandel. Two years later, between April and May 1959, he did prospections in the islands of Porto Santo and Desertas, also in the archipelago of Madeira. A year earlier, however, he had moved to the *Laboratoire d'Évolution des Êtres Organisés*, belonging to the *Faculté des Sciences* in Paris, directed by Pierre–Paul Grassé. This change would profoundly affect the career of Mateu, especially because the influence of Grassé, who not only ran the *Laboratoire d'Évolution*, but who also became the director of his thesis, which was already centered on the insect fauna of the Sahara, in particular that grouped under the protection of the emblematic acacias. Initially, Mateu focused the project on taxonomic questions, but Grassé convinced him to extend the study to biological aspects, which led to plan new field observations and laboratory studies of biological cycles and interactions between species. This would require new expeditions, which Mateu assumed enthusiastically.

Thus, between January and April 1958 he carried out an expedition in southern Mauritania sponsored by the CNRS. He started in Dakar and Saint Louis in Senegal, and then went to undertake collecting work in the area of Kiffa, in the highlands of Tagant, and in the Affolé mountains. Between July and November 1958, he explored the Ennedi Massif in Chad, and from 1961 he focused on the Algerian Sahara, with long stays at the *Centre National de Recherche sur les Zones Arides* of Béni Abbès. He developed the long campaigns of 1961 (January 1961 to June 1962), 1963 (February to April) and 1964 (January 1964 to June 1965). Between 1961 and 1965, Mateu spent a total of 48 months in the Sahara, studying insects and prehistory. In April 1968, he escaped into the desert again, this time in southern Tunisia, with Théodore Monod. The entomological observations and the material collected over the years allowed him to complete a doctoral thesis entitled *La biocénose des insectes*

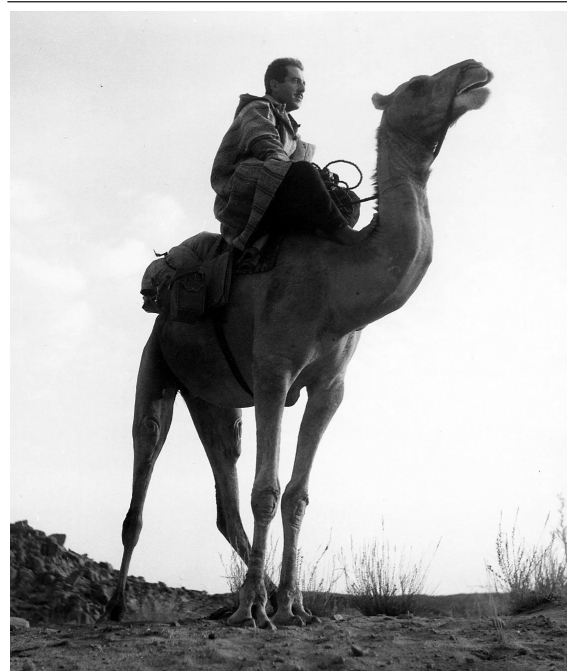


Fig. 2. One of the most iconic photos of Joaquin Mateu on his dromedary in the Hoggar massif in the Sahara in May 1951. He embarked on the Hoggar campaign alone, and the photograph was taken by himself with an automatic shutter. Photo: Joaquim Mateu.

xylophages des Acacia dans les régions sahariennes that he defended the January 28, 1969 and which allowed him to obtain the PhD degree in natural sciences from the University of Paris with honors and congratulations from the judgment committee (fig. 3) chaired by P. P. Grassé, which had A. Vandel and T. Monod as other members. The thesis was published in 1975 in the series *Anais da Faculdade de Ciencias da Universidade do Porto*. An overwhelming volume of 714 pages profusely illustrated, which is now essential to understanding the insect communities living in acacia trees and its fundamental role in the biology of desert environments.

Among the people attending the thesis defense, there was a very special person: his son Giuliano, a boy of 14 whose adoption was still underway. This process began in Italy in 1964 and ended in 1973 in Paris, after nearly 10 years of dealing with administrative issues in three countries, Spain, France and Italy, with very different legal systems, making it very difficult to reach an agreement, and they never seemed to do so. Finally, the obstacles were overcome thanks to the tenacity of Mateu, so Giuliano happily joined his life forever.

After the PhD thesis, which culminated in an intense research program of the entomological fauna of the desert, Mateu, then 48 years old, did not abandon his interest in the African continent, to which he returned in



Fig. 3. Joaquim Mateu defended his thesis, which was directed by Pierre–Paul Grassé, in Paris on January 28, 1969. The picture shows both men celebrating the successful defense with champagne . Photo: A. Devez, provided by Isabelle Desportes.

1971 (four months in the *Laboratoire de Primatologie et Écologie de la Forêt Equatoriale* in Makoku, Gabon, and three months in southern Morocco, especially in the provinces of Agadir and Tarfaya) and in 1972 (campaigns in regions of Tafilalet, Anti–Atlas, Ifni and Tiznit, Morocco). But he soon turned his attention to the Americas. Thus, from May 15 to July 1, 1972 he carried out collecting work in Mexico: Chihuahua desert, Transversal System, Veracruz and Tuxtla area. From August 8 to 11 November 1973 he returned to Mexico (Veracruz, Nuevo León, Oaxaca and Chiapas), and yet again in 1974, from August 28 to December 1 (Transversal System, San Luis Potosí, Durango, Chiapas and Yucatán), always helped by his Mexican friends, Violeta and Gonzalo Halffter and Pedro Reyes, from the *Instituto de Ecología*, Mexico DF. In the summer of 1977, he explored the coastal desert and Andean highlands of Peru, and then moved to Venezuela (Maracay and Venezuelan Andes) in the company of his friend Carlos Bordón. Finally, between July and August 1981, taking advantage of his participation in the *IV Congreso Latinoamericano de Entomología* (Maracay, Venezuela), he campaigned in the states of Barinas and Trujillo, also with C. Bordón. Many of the works on beetles of South America refer to cave fauna, which took him back to the world of biospeleology, and to participate in scientific meetings in this area, such as the *Colloque sur l'évolution des coléoptères souterrains* held in Moulis, in the French department

of Ariège, in September 1979, where he was one of the invited speakers (fig. 4).

During this long Parisian period, Mateu achieved all levels of promotion in the CNRS, *Chargé de recherches* in 1962, *Maître de recherches* in 1973 and *Directeur de recherches* in 1984. His scientific merits also started to be formally recognized. For example, in 1969 he received the *Prix Maurice et Thérèse Pic* of the *Société Entomologique de France*, in 1973 he was appointed honorary member of the *Institució Catalana d'Història Natural*, in 1980 he was honored with the *Prix Pouchard* of the *Académie Française*, and in 1982 he was elected corresponding member of the *Reial Acadèmia de Ciències i Arts* of Barcelona, on a proposal of his friend F. Español. In addition to his work at the CNRS, both in the field and in the laboratory, he also devoted part of his time to covering management tasks related to research on an altruistic basis. For example, in 1973 he accepted the responsibility of treasurer of the *Société de Biogéographie*, and in 1984 he became director of the journal *Nouvelle Revue d'Entomologie*, which he had helped to found in 1974 with H. Coiffait, and that he directed until 1986, when he became honorary director. That same year, Mateu reached 65, the age of retirement in the CNRS.

He had completed a long and fruitful career of over 31 years in this prestigious French institution, in which, besides the fieldwork already mentioned, we must add the publication of 179 papers on entomology, *i.e.*, an



Fig. 4. In September 1979, Joaquim Mateu was a special guest at the *Colloque sur l'évolution des coléoptères souterrains* held in Moulis. We see him in the front row among the participants (left to right), Xavier Bellés, Lysiane Juberthie–Jupeau, Robert Laneyrie, René Ginet, Christian Juberthie, Joaquim Mateu and Marina Blas. Photo of the Laboratoire Souterrain of Moulis.

average of about six per year, which is an extraordinarily high productivity, especially considering his sole authorship, the huge amount of fieldwork he did, and the publication of his thesis of 714 pages. Apart from this volume, which consolidates him as one of the most outstanding experts in desert entomology, Mateu published most of his entomological discoveries in Africa, not only on carabids, but also on other beetle families, such as cerambycids, clerids, buprestids, lyctids, and bostrychids. He also devoted much of his work to the fauna of the Atlantic Islands, publishing not only taxonomic data but also biogeographical syntheses, especially from the Canary Islands, Cape Verde and Madeira. He also published a remarkable series of notes on carabids from Madagascar, and descriptions of genera and species of this family of the five continents, either collected by him, or reported by colleagues. He was indisputably recognized as a world authority on Lebiinae, with numerous papers published on this group based on samples collected around the world, for example, the monograph of *Microlestes* of Africa, a volume of 149 pages that appeared in 1963. At the beginning of this Parisian period, most of his work was based on African materials, but gradually his interest drifted to the faunas of Central and South America, especially towards the carabids of the subfamily Trechinae, often troglobitic or endogean, sometimes collected by him, but also by other entomologists. For

example, he studied the collections obtained from the Catalan expeditions to the Peruvian caves in the 1970s, which resulted in the description of new genera and species of this group.

Return to Almería and to Barcelona (1987–2015)

In 1987, the year after his retirement, Mateu returned to Spain and settled in Almería, where he met with old friends, like A. Cobos, and with his former *Instituto de Aclimatación*, now converted into the modern *Estación Experimental de Zonas Áridas*, of the CSIC. He also made new friends when he came into contact with young local naturalists and speleologists, who reported to him the cave fauna samples that they collected. With these enthusiastic colleagues, who respected him as an indisputable senior leader, he even did speleological explorations, such as in 1989, when he explored (at 68 years old) the Cueva de las Ventanas, in Piñar (Granada), in search of cave insects (fig. 5). To some of these young colleagues, Mateu dedicated a number of genera and new species found by them, such as the *Laemostenus barrancoi* Mateu, 1996, dedicated to Pablo Barranco, from the University of Almería, or *Tinautius troglophilus* Mateu, 1997, dedicated to Alberto Tinaut, from the University of Granada. In these years in Almería, Mateu, tireless

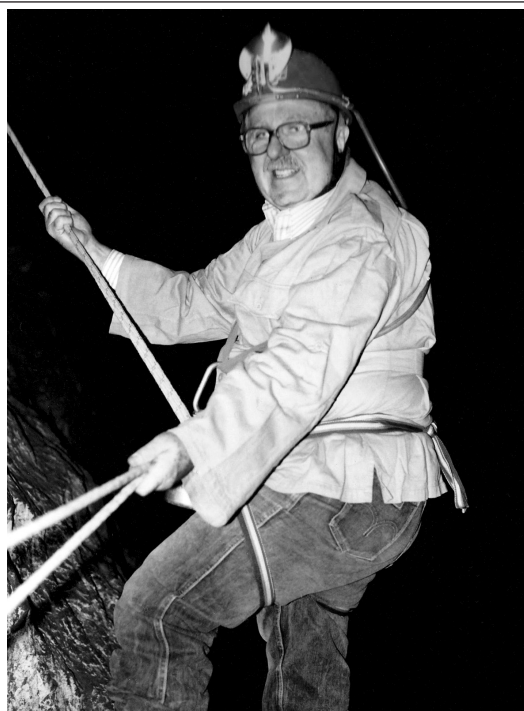


Fig. 5. In 1989, at 68 years old, we see Joaquim Mateu exploring the Cueva de las Ventanas, in Piñar (Granada); the exploration was carried out with Alberto Tinaut before the cave was opened to tourism. Photo: Manuel González Ríos.

traveler, took advantage of the freedom given by the retirement to privately visit new countries, mixing the entomological interest always present, with the curiosity of the traveler that he never lost. Thus, between March and April 1990 he traveled through Thailand, Malaysia and Nepal; between November 1993 and January 1994 through Argentina and Paraguay; and between April and May 1995 he returned to Malaysia. These trips led to new discoveries, especially of his favorite groups, Lebiinae and Zuphiinae, of which he continued publishing new species and revisions. During this stage in Almería, he also published numerous new species of troglobitic and endogean Trechinae from South America (from Ecuador, Peru, Colombia and Brazil). In all, 28 papers published between 1988 and 1997, about three per year. He also accepted commissions to review books of colleagues, as he did in 1988 on the *Fauna cavernicola i intersticial de la Península Ibèrica i les illes Balears* published by Xavier Bellés, or in 1993 on the *Fauna Ibèrica de Coleopters Anobiidae* of F. Español. About F. Español, he also contributed to the tribute paid to him in 1988 in his hometown, in Valls, publishing the paper *Francesc Español i l'entomologia sahariana*. That same year he received the sad news of the death in Paris of his close friend J. Nègre, on whom he published a biographical sketch the following year.

In 1997, aged 76, Mateu returned to Barcelona where he had his family and many friends, such as his old mentor F. Español and the Catalan carabidologist Joan Vives. Español, however, was 90 and had retired from all scientific activity; Mateu visited him regularly at his home until his friend's death in 1999. J. Vives was 79 years old and practically belonged to Mateu's generation, but he did not continue much scientific activity, and died three years later, in 2000. Mateu also rediscovered other friends from his time as a young speleologist, as the companions of the *Grup d'Exploracions Subterrànies* (GES), Josep Maria Thomas, Joaquim Montoriol, Francesc Vicens and Josep Termes, with whom in 1998 he celebrated the centenary of this group. In Barcelona, Mateu lived in a comfortable apartment on Còrsega street, which housed his collection of beetles and where he installed a small entomology laboratory to continue working at home (fig. 6). As in Paris and Almería, his home was always open to all those colleagues who wanted to spend some time studying insects, proverbial hospitality profited by old and new friends from Spain and from everywhere. Soon, he reconnected with the *Museu de Zoologia*, now integrated into the greater *Museu de Ciències Naturals de Barcelona*, under the direction of Anna Omedes. He regained direct contact with former colleagues, like X. Bellés, Oleguer Escolà, Jordi Ribes and Eduard Vives, and made new friends among the entomologists who frequented the museum, such as Lluís Auroux, Jordi Comas, Floren Fadrique, Xavier Jeremías, José Joaquín Pérez de Gregorio, Francesc Vallhonrat, and Amador Viñolas. He also collaborated with the journal of the Museum, the former *Miscelànea Zoològica*, founded by F. Español, now the international *Animal Biodiversity and Conservation*. In 2008, on the occasion of the reception of X. Bellés as new academician, he paid a visit to the *Reial Acadèmia de Ciències i Arts* of Barcelona, of which he had been corresponding member since 1982. This would be one of the last public events he attended.

In the early days of his return to Barcelona, he carried out notable activity in taxonomic studies. Between 1998 and 2008, he published 22 scientific papers, mostly on carabid beetles from caves of South America (often in collaboration with Mirto Etonti), from the Iberian Peninsula, such as the spectacular *Dalyat mirabilis* from caves in the Sierra de Gádor, in Almería (studied in collaboration with X. Bellés), and from North Africa, such as the new species of *Antoinella* discovered during the expeditions to the caves of Morocco organized by the *Associació Catalana de Biospeleologia* (described with O. Escolà and J. Comas).

In 2008, Mateu published his last paper, in which he proposed two new Brazilian species of *Negrea*, a genus that he had described in 1968 and with which he paid tribute to his friend J. Nègre. He was 87 years old, his skills had diminished significantly, and he decided to leave taxonomic research. During his Paris period, he had agreed that his collection would go to Turin, to the *Museo Regionale di Scienze Naturali* and he asked the Museum to come to Barcelona and to collect it. So one afternoon in late October 2009, from the balcony of



Fig. 6. Joaquim Mateu in 2005 sitting at his binocular microscope in the laboratory installed in his apartment in Còrsega street. Photo: Lluís Auroux.

his home in Còrsega street, Mateu watched an Italian truck carrying away his beloved beetles, the result of nearly 70 years of intense research. Surely, this was one of the saddest moments of his life. Progressively, his capabilities deteriorated to the point of his needing specialized care, and in August 2012, when he was 91 years old, he entered a residential care facility. There he lived the last stage of a peaceful old age, in the end conscious only of the good old memories and ignorant of the turmoils of the time. He died, without consciousness, on January 20, 2015 and his ashes will soon be laid to rest among the thin and welcoming sands of the Sahara desert.

Epilogue

It is said that a person does not die while there is someone that remembers him. It is a beautiful metaphor, but contradicts the cold biological truth. Death is inseparable from life, and new life is necessary. "We must make way for those who will follow us" is a biological principle that Mateu knew very well. What will not die, however, is all his work. His valuable legacy in the field of carabid beetles taxonomy, his contributions to the study of biogeography of the Saharan insects, of the Atlantic Islands, of the American tropics, his unique contributions to the study of cave fauna, and

his significant contributions to the knowledge of African prehistory. All these works will remain and become classic as a scientific reference in each of their specific fields forever. Their influence on all those who knew him and on whom he left the imprint of his profound dignity, generosity, personal honesty and professional rigueur will also remain. Qualities that we like to think that all of us who knew him have learned to some extent, and that we will pass on to "those who will follow us", through work or life. This is what we call cultural inheritance, and it, too, is a form of immortality.

Acknowledgements

Much of the data mentioned here were provided by Joaquim Mateu himself. His son Giuliano and his sister Elena helped me with memories, personal documents and photographs. Isabelle Desportes and Thierry Deuve sent me information that I needed from his stay in Paris. Thanks are also due to I. Desportes and to Terry Erwin for correcting the translations of my original Catalan manuscript to French and English. Lluís Auroux provided me with photographs of the last stage in Barcelona, and Alberto Tinaut sent me data on the last stage in Almería. I also wish to thank Anna Omedes for the honor of publishing this obituary in *Animal Biodiversity and Conservation*.