

OBITUARY

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Peter Jung-Bandelier (1937–2019): a life-long dedication to Caribbean Cenozoic mollusks and to the Natural History Museum Basel

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Peter Jung-Bandelier (Fig. 1) died on February 27th 2019 in Santa Maria Val Müstair, canton Graubünden, after a long illness. He is survived by his wife Suzanne Jung-Bandelier, daughter Regula Jung and son Thomas Jung. With his death, the scientific community has lost an eminent expert of Cenozoic mollusks, mainly of the tropical Americas. He was the last of a long line of scientists affiliated with the Natural History Museum Basel (NMB) who worked with Caribbean material. His forerunners were oil geologists Alfred Senn, Hans Hermann Renz, Rolf F. Rutsch and Hans G. Kugler (see e.g. Kugler, 1956, 2001; Renz, 1948; Rutsch, 1934a, 1934b; Senn, 1940). Peter was a long-time and active member of the Swiss Palaeontological Society, and was also involved in the *Unitas Malacologica Europaea* (from 1971 onward as a member of the steering committee) and the Society of the Swiss Museums (VMS Verband der Museen der Schweiz). Apart from his immense efforts in field campaigns and collecting of material for the NMB, he was also active in the planning and realisation of exhibits. In contrast to his predecessors and his successor as director of the NMB, Peter was marginally involved in academic teaching, and his activities at the University of Basel were restricted to occasional lessons in historical geology and student excursions.

Peter Jung, citizen of La Chaux-de-Fonds, was born on August 19th 1937 in Schwanden, canton Glarus. He was the third and youngest child of father René Philippe Jung, dentist, and mother Anna Susanna, born Rohner, cook.

Peter attended the primary school in Schwanden for 6 years, then the high school in Glarus for four years. In the spring of 1954, Peter moved to Biel where he finished the high school and passed the final exam in the fall of 1956.

Peter studied geology and palaeontology at the University of Basel with minors in mineralogy, botany and ethnology from the fall 1956 until the fall 1964. During that time, he attended lectures of P. Bearth, A. Bühler, M. Geiger-Huber, J. Haller, P. Huber, J. Hürzeler, W. Kuhn, H. P. Laubscher, H. Nüesch, A. Portmann, M. Reichel, H. Schaub, E. Schmid, W. Stingelin, L. Vonderschmitt, and E. Wenk. Early on he became associated with the Natural History Museum Basel (NMB) where H. G. Kugler inspired Peter's interest in Cenozoic Caribbean mollusks. Starting in January 1961 Peter worked as a personal assistant of H. G. Kugler in the Caribbean collection of the NMB, financed entirely by Kugler himself. Peter's first publication on Caribbean material was on gastropods (Jung, 1964). At that time, he was already intensely working on his Ph.D. on Miocene mollusks from the Paraganá peninsula, Venezuela, that were collected in 1931 by oil geologists C. Wiedenmayer and in 1948 by O. Renz. The Ph.D. was supervised by H. G. Kugler (NMB), M. Reichel (University of Basel) und W. P. Woodring (U.S. National Museum, Smithsonian Institution, Washington D.C.). For comparative purposes in October 1963, he visited the collection of Caribbean mollusks of the British Museum of Natural History (now Natural History Museum), curated by L. R. Cox. Back in Basel, Peter passed the final Ph.D. exam on November 5th 1964.

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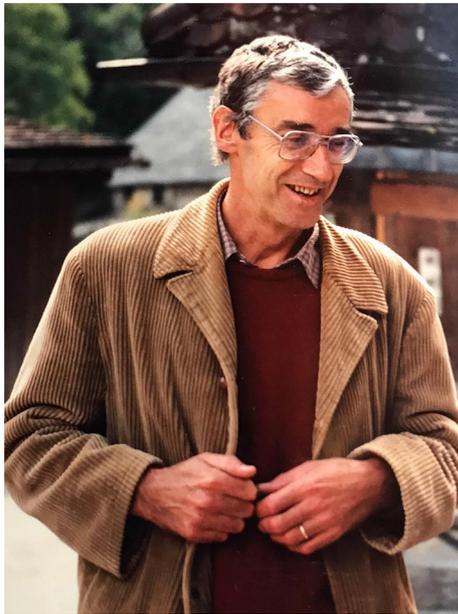


Fig. 1 Peter Jung as director of the NMB at the age of 55 in 1992 during a visit to the outdoor museum Ballenberg near Brienz, canton Bern

From December 1964 until January 1965, Peter visited various museums in the USA to consult with specialists on Cenozoic mollusks (U.S. National Museum, Smithsonian Institution, Washington D.C.; Field Museum, Chicago; Paleontological Research Institution, Ithaca; Harvard Museum of Comparative Zoology, Cambridge; American Museum of Natural History, New York; Academy of Natural Sciences of Philadelphia). During these travels and back in Basel, Peter finished his manuscript on the Miocene mollusks from the Paraganá peninsula, Venezuela (Jung, 1965, 1966a). He also studied nautilids of the genus *Aturia* (Jung, 1966b). From February until April 1965 Peter accompanied H. G. Kugler and J. B. Saunders on a field trip to the Bahamas, Trinidad and Barbados. Much material was collected and sent to Basel. During this time there was an extensive correspondence between Peter and Suzanne Bandelier. Museum visits and field trips were accurately documented in Peter's field notes which span 1959 until 2001 in 11 fieldbooks.

Peter married Suzanne Bandelier on August 21st 1965. On October 1st of the same year, he was appointed Scientific Assistant at the Geological Department of the NMB, a position which was renamed as Curator from 1972 on. The first large project was the reorganisation, together with H. G. Kugler and the collaboration of J. B. Saunders (chief palaeontologist of TEXACO Trinidad

Inc.), of the stratigraphical collection of Trinidad (see Kugler, 1956, 2001). In parallel, Peter started a larger publication project on the Neogene mollusks from Trinidad (Jung, 1969a, 1969b) while still finishing smaller works on gastropods from various Caribbean localities (Jung, 1966c, 1966d, 1968a) and a monograph on the strombid genus *Terebellum* (Jung & Abbott, 1967). By that time, Peter had become highly regarded as an expert on Cenozoic mollusks (see Jung, 1968b).

Late in 1965 Peter Jung requested the loan from ETH Zürich of the entire collection of Cenozoic mollusks of Karl Mayer-Eymar for comparative taxonomic research. Rudolf Trümpy responded positively, and in March 1966 the collection was transported to the NMB. Originally planned as a short-term loan, the collection of more than 800 drawers and an estimated 400,000 specimens stayed in Basel as an informal permanent loan (Jung, 1972a, 1973a) until September 2020 when it was returned to Zürich. Peter compiled, based on the publications, a card index of Mayer-Eymar's types but without locating them in the collection. Yet the collection proved very useful in the investigation of selected mollusk groups Peter was studying (Jung, 1974b, 1976).

In 1966 he started compiling yet another card index, this time of Caribbean mollusks from the marine Upper Cretaceous up to the Quaternary. This card index would remain unfinished. In the summer of 1966 Peter undertook a four weeks field trip with W. P. Woodring (U.S. National Museum, Smithsonian Institution, Washington D.C.) to classical Cenozoic localities in northern Italy, the Vienna and Paris basins and to Belgium. Peter in turn visited W. P. Woodring at the U.S. National Museum from October 1966 until May 1967 and visited important Cenozoic localities in Louisiana, Mississippi and Alabama.

From July 1968 until June 1969 Peter and Suzanne visited Jamaica where Peter worked as Research Assistant and Guest Curator at the University of the West Indies, Mona near Kingston. During this time, he made large collections of Cenozoic mollusks and Upper Cretaceous rudists that were sent to Basel. Additional specimens were gathered during a field trip to Carriacou and the Grenadines. Analysis of these materials resulted in several short publications (Cambray & Jung, 1971; Jung, 1970a, 1970b, 1971a, 1971b, 1972b; Robinson & Jung, 1972; Schmidt & Jung, 1993).

In the early 1970s, Peter made a few field trips in the Swiss Jura mountains (Jung, 1978; Renz et al., 1973) and examined mollusks from the Deep Sea Drilling Project (Jung, 1973b, 1974a, 1975). More importantly, Peter undertook in 1971 a three-month field trip to Ecuador

(with F. Stumm), Venezuela (with V. Hunter and O. Macsotay), Curaçao and Jamaica (with E. Robinson), and in 1973 to the Lesser Antilles (Trinidad, Carriacou, Anguilla, St. Martin, St. Bartholomew, Antigua, with R. Panchaud). During these excursions much material was collected and sent to Basel.

In August 1973, Peter's patron H. G. Kugler reached the age of 80, and Peter organized a symposium with contributors from many countries, honouring Kugler's great contributions to Caribbean geology and palaeontology (Jung, 1974c, 1974d). Shortly thereafter, Kugler retired as head of the geological department of the NMB, a position which he had held as a voluntary member of the museum from 1969 until the fall of 1973. Peter Jung was elected as his successor and officially assumed office on October 1st 1973 under director Hans Schaub.

In March 1975, the micropalaeontologist John B. Saunders, formerly TEXACO Trinidad Inc., was appointed as Scientific Assistant (later Curator) in the geology department, a position that he held until retiring in spring 1994. The collaboration between Peter Jung and J. B. Saunders would prove to be very fruitful in the coming years. In 1976 and 1977, Peter published only one paper (Jung, 1977) because he was, as others of the Geology Department, heavily involved in organizing the new permanent geology exhibition. Much new material for this exhibit was collected during field trips to Italy, Germany and France. The exhibit opened in September 1978 (see Jung & Panchaud, 1983). Peter and John Saunders were the project leaders of the exhibit, the smaller fossil gallery was curated by R. A. Gygi (see Gygi, 1982). Peter was subsequently involved in planning and realisation of various special exhibits: «Amber» (1979), «Alfred Wegener» (1980–1981), «Rhine water 83» (1983), «Dinosaurs of Switzerland» (1984), «To see and understand—electron microscopy» (1984–1985), «Geological maps: a national task» (1985), and most importantly «Dinosaurs from China» (1990–1991) with the record number of visitors of 156,521 (see Jung, 1990a, 1991).

From 1978 until 1980, after a preliminary assessment in 1977, an international team of scientists under the leadership of Jung and Saunders undertook extensive months' long field campaigns in the northern Dominican Republic. The work was supported by the Swiss National Science Foundation, and a total of 887 localities were sampled. The mollusks, corals, microsamples and a few other fossils are deposited at the NMB. First results were presented at the 9th Caribbean Geological Conference in Santo Domingo (Biju-Dival et al., 1980; Saunders et al., 1982), a comprehensive overview of the lithology,

stratigraphy and environment followed a few years later (Saunders et al., 1986).

Up to 30 scientists worked on the different fossil groups. This meant on the one hand fruitful international collaborations but otherwise also much work for loan preparations and assistance for guest scientists at the NMB. Many of these researchers worked at the NMB several months per year. Outstanding among these, Professor Ann Budd of the University of Iowa curated in Basel the collection of corals from the Dominican Republic and integrated their occurrences with corals from throughout the wider Caribbean (see Budd, 1986, 1987, 1991; Budd & Johnson, 1999). Peter and Suzanne welcomed many of these visitors in their private home in the Schützenmatt district of Basel where they hosted dinner parties and other gatherings that helped to stimulate fruitful collaboration. More than 20 scientific publications appeared since 1986 in the series «Neogene Paleontology of the Northern Dominican Republic», four of them by Peter (Jung, 1986a, 1994, 1996; Jung & Petit, 1990). In addition, Peter also portrayed the Dominican Republic project in a more popular manner (Jung, 1993, 2001). Another contribution in the series is in preparation (Landau & Monsecour in press). A synopsis of the results of the Dominican Republic campaign was also published in a book (Nehm & Budd 2008).

In the spring of 1979, former Director of the NMB Hans Schaub retired and the head of the zoology department and vice director Urs Rahm was elected as the new Director. Peter Jung was appointed as Rahm's successor as vice director of the museum. In the same year Peter met Jack and Winifred Gibson-Smith, retired oil geologists who had amassed a huge collection of Cenozoic and recent mollusks from Venezuela and adjoining areas (see Wiedenmayer, 2016). Subsequently, the Gibson-Smiths donated their collection of more than 100,000 bivalves and gastropods that arrived at the NMB in 1984. From 1985 until 1991, Jack and Winifred visited the NMB for two to four months a year to curate the entire collection.

Much of the 1980s was devoted to the Cenozoic fossils of the Dominican Republic, with frequent visits to foreign museums and universities. There was also some research on other Caribbean material (Jung, 1987; Kugler et al., 1984) and even on the Cenozoic of the Molasse basin (Jung, 1982). Peter also wrote several popular articles about the NMB and his research (Jung, 1984, 1986b; Jung & Panchaud, 1980). In 1989 he published a major monograph on the gastropod genus *Strombina* and related genera (Jung, 1989a, 1989b), a project that stimulated much

additional collaboration (Fortunato & Jung, 1995; Jackson et al., 1996). A publication on a fossil sea-hare from the Dominican Republic would only appear much later (Geiger & Jung, 1996).

On December 6th 1986, Peter's long-time patron H. G. Kugler died at the age of 93. He had been in good health almost to the end of his life, but his death was nevertheless a hard hit to Peter and many other scientists (Jung, 1986c, 1988a, 1988b; Jung & Saunders 1987; Saunders, 1987a, 1987b). Shortly thereafter, another of Peter's supporters, Hans Schaub, former Director of the NMB, celebrated his 80th birthday (Jung, 1988b).

The project on the Neogene of the Northern Dominican Republic was a great success and spurred interest for investigations of other regions in the Caribbean. Of particular concern was the development of the Neogene faunas in the Caribbean and the adjacent Pacific before, during and after the emergence of the Isthmus of Panama. To this end, Jeremy B. C. Jackson and Anthony G. Coates founded the Panama Paleontology Project (PPP) in 1986, based at the Smithsonian Tropical Research Institute (STRI) in the Republic of Panama. Partner institutions were the Smithsonian National Museum of Natural History in Washington, DC; Florida International University Miami; the Natural History Museum, London; and a few others. Peter Jung was asked to participate in the project, and from 1987 until 2000 the NMB was one of the partner institutions. It was also agreed that all of the molluscan collections should be deposited at the Basel museum.

Peter had done fieldwork in the isthmian region before, principally in Costa Rica with P. O. Baumgartner. But now lengthy field trips mainly to Panama and Costa Rica, but also Nicaragua, became almost annual activity until 1999 (Jung, 1989c, 1990b). The group travelled deep into the interior of the Darien region of Panama in Emera canoes, and along both coasts of Panama and Costa Rica in STRI research vessels and trucks. NMB personnel involved were Peter Jung, John B. Saunders, René Panchaud and Antoine Heitz. The mollusk fossils from these campaigns were curated by Peter and Antoine and fill many hundred drawers. In the meantime, the PPP samples were merged with material from older campaigns and the Gibson-Smith collection. Now the whole collection of the tropical Americas is beautifully ordered according to country, region/province, stratigraphy and locality instead of individual species separated taxonomically. This has proved to be a major contribution to ease of palaeontological and stratigraphic research. The number of Cenozoic mollusk specimens amounts to more than 650,000.

The PPP collection again attracted many visitors to the NMB, among them Ann Budd, Anthony Coates, Jay Schneider, Kenneth Johnson, Orangel Aguilera, David Harper, Ross Nehm, Stephen K. Donovan, Laurie Anderson, Helena Fortunato and others. Jeremy Jackson (STRI) spent more than a year in Basel during his sabbatical in 1996–1997. From August 1996 until January 1997 Jon Todd (Natural History Museum, London) was employed at the NMB as a scientific collaborator paid by the Swiss National Science Foundation. He was then succeeded by Dan Miller who held this position until the end of 2000.

Early in 1990, Peter Jung was elected as successor of Urs Rahm as new Director of the NMB. During his term in office the NMB showed several temporary exhibits: «Dinosaurs from China» (1990–1991), «Dinosaurs—a Global View» (1992), «The Ravages of Time—Building Stones, disaggregation and conservation» (1992–1993), «Jürg Kreienbühl—Pictures from the Jardin des Plantes in Paris» (1992–1993), «Hunting Ground Jurassic Seas—The Fossils of Enrico Romano» (1999). Peter also initiated a new museum logo and gave the external annual report a modern appearance. Two museum projects that were initiated in the early 1990s, were the development of new permanent exhibits, and the roofing of the courtyard to considerably augment space for exhibits. Both of these projects would, however, eventually not be realised.

Although he still considered his work on Caribbean mollusks as his most important activity, Peter's new duties slowed down his research and he would only publish six more taxonomic papers on Cenozoic mollusks of the tropical Americas (Geiger & Jung, 1996; Jung, 1994, 1995, 1996, 2004; Jung & Heitz, 2001). Yet the Neogene mollusk fauna of tropical America formed the basis for many important papers that documented the evolutionary and environmental changes accompanied by the closure of the Isthmus of Panama (Coates et al., 1992; Collins & Coates, 1999; Jackson et al., 1992, 1993, 1999a, 1999b; Miller & Budd, 2001; Todd et al., 2002). Research on these fossils continues up to today (e.g. O'Dea et al., 2016) although as of 2000 without the active participation of the NMB.

Peter retired as Director of the NMB and Head of the Geology Department in December 2000 at the age of 63. Christian A. Meyer, also a palaeontologist, was elected as his successor and terminated the collaboration with the other institutions involved in the PPP. Peter stayed at the NMB for one and a half more year and finished two taxonomic publications (Jung & Heitz, 2001; Jung, 2004) and participated in one more ecological paper (Todd et al., 2002). He also had plans for three more projects:

a work on the gastropod group Xenophoridae from the Neogene of the Dominican Republic; the mollusks from the Eocene-Miocene White Limestone Group of Jamaica; a revision of the gastropod genus *Ithycythara* from the Neogene of tropical America. However, these projects were never finished because of failing health. Until his final contribution, Peter wrote his manuscripts on a typewriter, and his secretary would have to rewrite them on a computer.

Peter was feted by the Caribbean palaeontological community at the North American Paleontological Convention (2001, Berkeley CA) where he gave his last scientific talk («History of the Dominican Republic Project»; Jung, 2001). The event was organized in part to celebrate his leadership and great contributions to Caribbean and molluscan palaeontology. By the end of August 2002, Peter announced that he would retire as voluntary collaborator of the NMB. He was increasingly frustrated that members of the Basel museum no longer pursued his legacy, the research on the fossils of the greater Caribbean region. In 2004, he completely withdrew from scientific activities. Peter and Suzanne then moved to their vacation home in Santa Maria, canton Graubünden. Sadly, in his last years, Peter's health had deteriorated and he increasingly suffered from dementia. On February 27th 2019 he died of a stroke.

When considering the merits of Peter Jung, we must emphasize his enormous efforts in field work and collecting fossils in the greater Caribbean region. He increased the number of mollusk specimens in the NMB collection by far more than 100,000. In addition, he acquired the very valuable collection of the Gibson-Smith couple, further increasing the Caribbean stock by more than 100,000 specimens. During the PPP campaign much additional material was added, and all these fossils formed the basis for many research projects. Throughout his career Peter had frequently visited other institutions and established collaborations with mollusk researchers around the world. Later he was able to attract many of these people and new international collaborators to visit the Basel museum and do research on the Caribbean material. He also did his share in this research, and his taxonomic work, quite often in the form of large monographs, has stood the test of time.

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Authors' contributions

The author read and approved the final manuscript.

Competing interests

The author declares that he has no competing interests.

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References

- Budd, A. (1986). Neogene Paleontology in the northern Dominican Republic. 3. The family Poritidae (Anthozoa: Scleractinia). *Bulletins of American Paleontology*, 90, 43–123.
- Budd, A. (1987). Neogene Paleontology in the northern Dominican Republic. 4. The genus *Stephanocoenia* (Anthozoa: Scleractinia: Astrocoeniidae). *Bulletins of American Paleontology*, 93, 5–22.
- Budd, A. (1991). Neogene Paleontology in the northern Dominican Republic. 11. The family Faviidae (Anthozoa: Scleractinia). Part I. The genera *Montastraea* and *Solenastrea*. *Bulletins of American Paleontology*, 101, 1–83.
- Budd, A., & Johnson, K. G. (1999). Neogene Paleontology in the northern Dominican Republic. 11. The family Faviidae (Anthozoa: Scleractinia). Part II. The genera *Caulastrea*, *Favia*, *Diploria*, *Thysanus*, *Hadrophyllia*, *Manicina*, and *Colpophyllia*. *Bulletins of American Paleontology*, 113, 1–21.
- Collins, L. S., & Coates, A. G. (1999). A Paleobiotic Survey of Caribbean Faunas from the Neogene of the Isthmus of Panama. *Bulletins of American Paleontology*, 357, 351.
- Gygi, R. A. (1982). Versteinerungen der weiteren Umgebung von Basel. *Veröffentlichungen Des Naturhistorischen Museums Basel*, 11, 1–32.
- Kugler, H. G. (1956). Trinidad. In: *Lexique Stratigraphique International, Amerique Latine. Fascicule 2b, Antilles*, pp. 42–116. Paris, Centre National de la Recherche Scientifique.
- Kugler, H. G. (2001). Treatise on the Geology of Trinidad, Part 4, The Paleocene to Holocene formations. Edited by H. M. Bolli & M. Knappertsbusch.
- Landau, B. M. & Monsecour, K. (in press). Neogene Paleontology in the Northern Dominican Republic. 26. The family Columbellidae (fine) (Mollusca : Gastropoda : Buccinidae). *Bulletins of American Paleontology*.
- Miller, D. J., & Budd, A. F. (2001). Morphology and evolution of the late Cenozoic marine biota of tropical America. *Journal of Paleontology*, 75(3), 473–751.
- Nehm, R. H. & Budd, A. F. (Eds. 2008). *Evolutionary Stasis and Change in the Dominican Republic Neogene. Topics in Geobiology* 30, 314 pp. Dordrecht, Springer.
- O'Dea, A., Aguilera, O., Aubry, M.-P., Berggren, W. A., Budd, A. F., Cione, A. L., Coates, A. G., Collins, L. S., Coppard, S. E., Cozzuol, M. A., de Queiroz, A., Duque-Caro, H., Eytan, R. I., Farris, D. W., Finnegan, S., Gasparini, G. M., Grossman, E. L., Johnson, K. G., Keigwin, L. D., ... Jackson, J. B. C. (2016). Formation of the Isthmus of Panama. *Science Advances*, 2(8), 1–12.
- Renz, H. H. (1948). Stratigraphy and fauna of the Agua Salada Group, state of Falcón, Venezuela. *Geological Society of America Memoir*, 32, 1–219.
- Rutsch, R. (1934a). Die Gastropoden aus dem Neogen der Punta Gavilán-Schichten in Nord-Venezuela, Teil 1. *Abhandlungen Der Schweizerischen Paläontologischen Gesellschaft*, 54(3), 1–88.
- Rutsch, R. (1934b). Die Gastropoden aus dem Neogen der Punta Gavilán-Schichten in Nord-Venezuela, Teil 2. *Abhandlungen Der Schweizerischen Paläontologischen Gesellschaft*, 55(1), 89–169.
- Saunders, J. B. (1987a). Hans G. Kugler (1893–1986). *Memorials, A.A.P.G. Bulletin* 71/12, 1499–1505.
- Saunders, J. B. (1987b). Memorial to Hans Gottfried Kugler, 1893–1986. *Geological Society of America, Memorials*, 11(87), 1–5.
- Senn, A. (1940). Paleogene of Barbados and its bearing on the history and structure of the Antillean-Caribbean region. *AAPG Bulletin*, 24(9), 1548–1610.
- Wiedenmayer, F. (2016). The collections of Cenozoic marine molluscs from Venezuela and other areas of the Western Atlantic (Karibik-Sammlung) in the Natural History Museum Basel (NMB). *Unpublished catalogue, available at the NMB*, 1–860, plates 1–113 (plates only with outlines of the specimens).

List of publications by Peter Jung

- Biju-Duval, B., Jung, P. & Saunders, J. B. (1980). Field Trip E – Rio Gurabo. 9th Caribbean Geological Conference, Santo Domingo, Dominican Republic. *Field Guide*, 140–166.
- Cambray, F. W., & Jung, P. (1971). Provenance of the Richmond Formation from sole marks. *Journal of the Geological Society of Jamaica*, 11, 13–18.
- Coates, A. G., Jackson, J. B. C., Collins, L. S., Cronin, T. M., Dowsett, H. J., Bybell, L. M., Jung, P., & Obando, J. A. (1992). Closure of the Isthmus of Panama: The near-shore marine record of Costa Rica and western Panama. *Geological Society of America Bulletins*, 104, 814–828.
- Fortunato, H. & Jung, P. (1995). The *Strombina*-Group (Neogastropoda: Columbelloidea): a case study of evolution in the neotropics. *Abstracts and Program of the Geological Society of America Annual Meeting*, 27, A-52.
- Geiger, D. L., & Jung, P. (1996). A shell of *Floribella aldrichi* (Fall, 1890), a large seahare (Mollusca: Opisthobranchia: Aplysiidae) from the Neogene of the Northern Dominican Republic. *Journal of Conchology*, 35(5), 437–444.
- Jackson, J. B. C., Fortunato, H., Todd, J., Heitz, A., Alvarez, M., Johnson, K., & Jung, P. (1999). Molluscan diversity increased with declining productivity in tropical America. *Abstracts and Program of the Geological Society of America Annual Meeting*, 31, A-399.
- Jackson, J. B. C., & Jung, P. (1992). Molluscan diversification and extinction on opposite sides of the Isthmus of Panama. *Fifth North American Paleontological Convention, Abstracts and Program, the Paleontological Society Special Publication*, 6, 144.
- Jackson, J. B. C., Jung, P., & Fortunato, H. (1996). Paciphilia revisited: Transisthmian evolution of the *Strombina*-Group (Gastropoda: Columbelloidea). In J. B. C. Jackson, A. F. Budd, & A. G. Coates (Eds.), *Evolution and environment in Tropical America* (pp. 234–270). Chicago.
- Jackson, J. B. C., Jung, P., Coates, A. G., & Collins, L. S. (1993). Diversity and extinction of tropical American mollusks and emergence of the Isthmus of Panama. *Science*, 260, 1624–1626.
- Jackson, J. B. C., Todd, J. A., Fortunato, H., & Jung, P. (1999). Diversity and assemblages of Neogene Caribbean Mollusca of lower Central America. In: L. S. Collins & A. G. Coates (Eds.) *A Paleobiotic Survey of Caribbean Faunas from the Neogene of the Isthmus of Panama*. *Bulletins of American Paleontology*, 357, 193–230.
- Jung, P. (1964). Bemerkungen zur Abgrenzung von Spezies der *Natica-Carriacou*-Gruppe. *Verhandlungen Der Naturforschenden Gesellschaft Basel*, 75, 133–139.
- Jung, P. (1965). Miocene mollusca from the Paraganá Peninsula. *Venezuela. Bulletins of American Paleontology*, 49(223), 387–652.
- Jung, P. (1966a). *Miocäne Mollusken von der Halbinsel Paraganá, Venezuela. Verkürzte Fassung der Dissertation Universität Basel* (pp. 1–15). Ithaca: Paleontological Research Institution.
- Jung, P. (1966b). Zwei miocäne Arten von *Aturia* (Nautilaceae). *Eclogae Geologicae Helveticae*, 59(1), 485–493.
- Jung, P. (1966c). *Murex (Siratus) denegatus* Jung, new name. *Tulane Studies in Geology*, 4(2), 77.
- Jung, P. (1966d). Der Status zweier von Peter Merian beschriebener Arten von Gastropoden. *Verhandlungen Der Naturforschenden Gesellschaft Basel*, 77, 76–81.
- Jung, P. (1968a). Fossil *Pleurotomaria* and *Haliotis* from Barbados and Carriacou, West Indies. *Eclogae Geologicae Helveticae*, 61(2), 593–605.
- Jung, P. (1968b). Book review: Die miozän-mediterranen Gastropoden Ungarns, by Laszlo Strausz. *Journal of Paleontology*, 42(1), 248–249.
- Jung, P. (1969a). Miocene and Pliocene Mollusks from Trinidad. *Bulletins of American Paleontology*, 55(247), 289–657.
- Jung, P. (1969b). A Pliocene Molluscan faunule from Trinidad. *Tulane Studies in Geology*, 7(2), 85–89.
- Jung, P. (1970a). Fossil *Pleurotomaria* from Jamaica. *Caribbean Journal of Science*, 10(1–2), 83–86.
- Jung, P. (1970). *Torreites sanchezi* (Douvillé) from Jamaica. *Palaeontographica Americana*, 7(42), 1–13.
- Jung, P. (1971a). *Strombus gigas* Linnaeus from the Bowden Formation, Jamaica. *Nautilus*, 84(4), 129–131.
- Jung, P. (1971b). Fossil mollusks from Carriacou, West Indies. *Bulletins of American Paleontology*, 61(269), 143–262.
- Jung, P. (1972a). The collection of Karl Mayer-Eymar. *Nautilus*, 85(4), iii.
- Jung, P. (1972b). Mollusks from the White Limestone Group of Jamaica. *Transactions of the 6th Caribbean Geological Conference (Margarita, 1971)*, 465–468.
- Jung, P. (1973a). La collection de Charles Mayer-Eymar. *Journal De Conchyliologie*, 110(2), 68.
- Jung, P. (1973b). Pleistocene Pteropods – Leg 15, Site 147, Deep Sea Drilling Project. *Initial Reports DSDP*, 15, 753–767.
- Jung, P. (1974a). Molluscs – Leg 26, Site 254, Deep Sea Drilling Project. *Initial Reports DSDP*, 26, 242–243.
- Jung, P. (1974). A revision of the family Seraphsidae (Gastropoda: Strombacea). *Palaeontographica Americana*, 8(47), 1–72.
- Jung, P. (1974). Contributions to the geology and paleobiology of the Caribbean and adjacent areas. Dedicated to the 80th birthday of Hans G. Kugler. *Verhandlungen der Naturforschenden Gesellschaft Basel*, 84(1), 520.
- Jung, P. (1974d). Eocene Mollusks from Curaçao, West Indies. In P. Jung (Ed.), *Contributions to the Geology and Paleobiology of the Caribbean and Adjacent Areas*. Dedicated to the 80th Birthday of Hans G. Kugler. *Verhandlungen der Naturforschenden Gesellschaft Basel*, 84(1), 483–500.
- Jung, P. (1975). Quaternary larval gastropods from leg 15, site 147, deep sea drilling project. Preliminary report. *Veliger*, 18(2), 109–126.
- Jung, P. (1976). The Eocene genus *Sawkinsia* (Bivalvia: Tridacnidae). *Eclogae Geologicae Helveticae*, 69(3), 743–751.
- Jung, P. (1977). Two rare gastropod genera from the Pliocene of Venezuela. *Eclogae Geologicae Helveticae*, 70(3), 845–854.
- Jung, P. (1978). Aptian to Maastrichtian in the Swiss Jura Mountains. *Eclogae Geologicae Helveticae*, 71(1), 1–18.
- Jung, P. (1982). Coordonnateur: Nouveaux résultats biostratigraphiques dans le bassin molassique, depuis le Vorarlberg jusqu'en Haute-Savoie. *Documents des Laboratoires de Géologie de Lyon, Nouvelle Série*, 7, 91 pp.
- Jung, P. (1984). From hobby to science. *Swissair Gazette*, 4, 32.
- Jung, P. (1986a). Neogene Paleontology in the Northern Dominican Republic. 2. The genus *Strombina* (Gastropoda: Columbelloidea). *Bulletins of American Paleontology*, 90(324), 1–42.
- Jung, P. (1986b). Naturhistorisches Museum. *B Wie Basel*, 4, 18.
- Jung, P. (1986c). Hans Kugler zum Gedenken. *Basler AZ vom 15.12.1986*, 2.
- Jung, P. (1987). Giant gastropods of the genus *Campanile* from the Caribbean Eocene. *Eclogae Geologicae Helveticae*, 80(3), 889–896.
- Jung, P. (1988a). Hans Kugler—Wissenschaftler und Mäzen. *Basler Stadtbuch Für*, 1987, 187–190.
- Jung, P. (1988b). Hans Schaub-Nidecker, Reigoldswil, zum Fünfundsechzigsten. *Basellandschaftliche Zeitung*, 156. Jahrgang, Nr. 230, vom 29. September 1988, 21.
- Jung, P. (1989a). *Strombina* (Gastropoda: Columbelloidea) and related genera, fossil and living. *Abstracts of the 10th International Malacological Congress, Tübingen*, 119.
- Jung, P. (1989b). Revision of the *Strombina*-Group (Gastropoda: Columbelloidea), fossil and living. Distribution, biostratigraphy, systematics. *Schweizerische Paläontologische Abhandlungen*, 111, 1–298.
- Jung, P. (1989c). Panama Paleontological Project (PPP). *Abstracts of the 10th International Malacological Congress, Tübingen*, 120.
- Jung, P. (1990a). Dinosaurier aus China. *Die Museen in Basel*, 337.
- Jung, P. (1990). Paleontological field work between Atlantic and Pacific. *Bulletin der Vereinigung Schweizerischer Petroleum-Geologen und-Ingenieure*, 55(129), 17–20.
- Jung, P. (1991). Dinosaurier aus China. *Basler Stadtbuch für 1990*, 111. Jahrgang, 101–105.
- Jung, P. (1993). The Dominican Republic Project. *American Paleontologist*, 1(5), 1–3.
- Jung, P. (1994). Neogene Paleontology in the Northern Dominican Republic. 15. The genera *Columbella*, *Eurypyrene*, *Parametaria*, *Conella*, *Nitidella*, and *Metulella* (Gastropoda: Columbelloidea). *Bulletins of American Paleontology*, 106(344), 1–45.
- Jung, P. (1995). *Judaphos*, a new genus of buccinid gastropod from the Neogene of Costa Rica. *Veliger*, 38(1), 43–46.
- Jung, P. (1996). Neogene Paleontology in the Northern Dominican Republic. 17. The families *Cuspidariidae* and *Verticordiidae* (Mollusca: Bivalvia). *Bulletins of American Paleontology*, 110(351), 35–75.

- Jung, P. (2001). History of the Dominican Republic Project. *North American Paleontological Convention, Program and Abstracts. Paleobios, 21, Supplement to no 2*, 76.
- Jung, P. (2004). The genus *Lepicythara* (Gastropoda: Turridae) from the Neogene and Pleistocene of tropical America. *Bulletins of American Paleontology, 366*, 1–76.
- Jung, P., & Abbott, R. T. (1967). The genus *Terebellum* (Gastropoda: Strombidae). *Indo-Pacific Mollusca, 1(7)*, 445–454.
- Jung, P., & Heitz, A. (2001). The subgenus *Lentigo* (Gastropoda: Strombidae) in tropical America, fossil and living. *Veliger, 44(1)*, 20–53.
- Jung, P. & Panchaud, R. (1980). Geologie (Erdgeschichte). In Naturhistorisches Museum Basel (Ed.), *Raritäten und Curiositäten der Natur. Die Sammlungen des Naturhistorischen Museums Basel* (pp. 30–45). Basel: Birkhäuser.
- Jung, P., & Panchaud, R. (1983). Vom Hochgebirge zum Tiefseeegraben. *Veröffentlichungen Des Naturhistorischen Museums Basel, 13*, 1–32.
- Jung, P., & Petit, R. E. (1990). Neogene Paleontology in the Northern Dominican Republic. 10. The family Cancellariidae (Mollusca: Gastropoda). *Bulletins of American Paleontology, 98(334)*, 83–144.
- Jung, P. & Saunders, J. B. (Eds. 1987). Hans G. Kugler, 1893–1986. 51 pp. Basel, Birkhäuser.
- Kugler, H. G., Jung, P., & Saunders, J. B. (1984). The Joes River Formation of Barbados and its fauna. *Ecolgae Geologicae Helvetiae, 77(3)*, 675–705.
- Renz, O., Jung, P., & Panchaud, R. (1973). Über eine Öllindikation im Mittleren Oxfordien des Waadtländer Jura. *Bulletin der Vereinigung Schweizerischer Petroleum-Geologen und-Ingenieure, 40(97)*, 25–28.
- Robinson, E., & Jung, P. (1972). Stratigraphy and age of marine rocks, Carriacou, West Indies. *American Association of Petroleum Geologists, Bulletin, 56(1)*, 114–127.
- Saunders, J. B., Jung, P., & Biju-Duval, B. (1986). Neogene Paleontology in the Northern Dominican Republic. 1. Field surveys, lithology, environment, and age. *Bulletins of American Paleontology, 89(323)*, 1–79.
- Saunders, J. B., Jung, P., Geister, J. & Biju-Duval, B. (1982). The Neogene of the south flank of the Cibao Valley, Dominican Republic: a stratigraphic study. *Transactions of the 9th Caribbean Geological Conference, Santo Domingo, Dominican Republic, 1*, 151–160
- Schmidt, W. & Jung, P. (1993). Tertiary cephalopods from Jamaica. In R. M. Wright & E. Robinson (Eds.), *Biostratigraphy of Jamaica* (pp. 347–352). *Geological Society of America Memoir, 182*. Boulder, Geological Society of America.
- Todd, J. A., Jackson, J. B. C., Johnson, K. G., Fortunato, H. M., Heitz, A., Alvarez, M., & Jung, P. (2002). The ecology of extinction: molluscan feeding and faunal turnover in the Caribbean Neogene. *Proceeding of the Royal Society London B, 269*, 571–577.

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