

Dr. Barbara Eichhorn, archaeobotanist

19th March, 1967 – 7th February, 2020



Dr. Barbara Eichhorn was born and went to school in Wiesbaden (Germany). From 1988 to 1995 she studied biology at Goethe University Frankfurt, with a focus on botany. She first came into contact with Africa during her master thesis on weedy plant communities in Burkina Faso. Since that time, the fascination for plants, and for Africa, was a constant factor in her professional career. It directed her to Namibia where she conducted her doctoral thesis on the vegetation history of the Kaokoland in the frame of a large interdisciplinary research project at Cologne University (1995–2002). This was the first time that she used wood charcoal as a valuable proxy for reconstruction of the vegetation in the past. In the following years, Barbara became one of the most appreciated experts for the identification and interpretation of archaeological charcoal in Africa and beyond.

From 2003 to 2012, Barbara worked as postdoc researcher in several projects of Goethe University Frankfurt. Her major project was on “Landscape archaeology of the Dogon country (Mali)”, together with an international team of Swiss, French and German participants. In parallel with her engagement in Mali, Barbara built a network of archaeologists interested in vegetation reconstruction, based on charcoal from archaeological sites. As a freelance worker, she cooperated with scholars from Germany, Britain, Switzerland, France, Sweden, and the US.

The countries whence archaeological charcoal reached her microscope included Mali, Togo, Namibia, Mozambique, Nigeria, Egypt, Sudan, and Turkey. A focus in many of these studies was on iron metallurgy, on the use of special woods for this purpose, and on the effects of extensive wood extraction on the surrounding vegetation.

Barbara was also an excellent phytolith researcher. During her field trips to Africa, she collected plants and soils for phytolith analysis and she was especially interested in the relationship between different plant communities and their phytolith signal in the soil. This was only possible due to her profound knowledge of modern plants and vegetation communities. She found out that the plant family Commelinaceae produces very characteristic phytoliths in their seeds that are often present in tropical sediments but had always been erroneously attributed to other taxonomic groups.

Between 2015 and 2019, Barbara worked as postdoc in two projects at Goethe University Frankfurt. In the phytolith project she studied Holocene sediment cores from Nigeria and Benin. In the Congo project, the results of which are presented in this VHAA paper, she identified seeds, fruits, charred parenchyma fragments and food crust in pottery, as well as phytoliths from archaeological sites in the Inner Congo Basin.

Barbara was an extremely careful archaeobotanist. She would not rest until she had eliminated the tiniest doubt about her identifications. With this scrutiny, she set very high quality standards in the field of African archaeobotany. Barbara was also a dedicated botanist and had stupendous knowledge of plants in all their aspects, including ethnobotany. Together with Alexa Höhn she edited the book “Trees, grasses, and crops”, and in this book she published two studies, on the ethnobotany of western Namibia, and on experimental beer brewing from pearl millet. One of her last activities was a field trip to Ethiopia in 2018 where she collected wood and soil samples for a planned Ethiopian-German-American research project. Unfortunately, she could not see realisation of this project.

Barbara was a team player. In all interdisciplinary research groups, Barbara’s participation was well acknowledged, not only because of her scientific competence, but also because her presence contributed greatly to a good working atmosphere, thanks to her fine humor and perpetually cooperative behaviour.

In summer 2019, Barbara fell ill, and she passed away on 7th February 2020, much too early. The archaeobotanical community has lost an excellent archaeobotanist, a wonderful person and a good friend.

Katharina Neumann, September 2020

Publications by Barbara Eichhorn

2020

Bleasdale M., H.-P. Wotzka, B. Eichhorn et al.: Isotopic and microbotanical insights into Iron Age agricultural reliance in the Central African rainforest. *Communications Biology* 2020(3): 619. <https://doi.org/10.1038/s42003-020-01324-2>.

2019

Eichhorn, B.: Der Mensch lebt nicht vom Fleisch allein. Essbare pflanzliche Ressourcen und ihre potentielle Bedeutung in einem ariden Raum im Westen Namibias. In: Eichhorn, B. & A. Höhn (eds.): *Trees, Grasses and Crops. People and Plants in Sub-Saharan Africa and Beyond*. Bonn, Rudolf Habelt: 81–107.

Eichhorn, B.: On the search for beer in the archaeobotanical records of West and West Central Africa – a methodological contribution. In: Eichhorn, B. & A. Höhn (eds.): *Trees, Grasses and Crops. People and Plants in Sub-Saharan Africa and Beyond*. Bonn, Rudolf Habelt: 109–117.

Eichhorn, B., J. Humphris, C. Robion-Brunner & A. Garnier: A ‘long-burning issue’: comparing woody resource use for ironworking in three major iron smelting centres of sub-Saharan Africa. In: Meurers-Balke, J., T. Zerl, & R. Gerlach (eds.): *Auf dem Holzweg... Eine Würdigung für Ursula Tegtmeier*. *Archäologische Berichte* 30, Heidelberg, Propylaeum: 103–124. <https://doi.org/10.11588/propylaeum.492>

Kay, A., D.Q. Fuller, K. Neumann, B. Eichhorn, A. Höhn, J. Morin-Rivat, L. Champion, V. Linseele, E. Huysecom, S. Ozainne, L. Lespez, S. Biagetti, M. Madella, U. Salzmann & J.O. Kaplan: Diversification, intensification and specialization. Changing land use in western Africa from 1800 BC to AD 1500. *Journal of World Prehistory* 32: 179–228. <https://doi.org/10.1007/s10963-019-09131-2>

Humphris, J. & B. Eichhorn: Fuel selection during long-term ancient iron production in Sudan. *Azania* 54: 33–54. <https://doi.org/10.1080/0067270X.2019.1578567>

2018

Eichhorn, B.: Wood charcoal. In: Haour, A. (ed.), 2000 years in Dendi, Northern Benin. *Archaeology, History and Memory. Journal of African Archaeology Monograph* 13: 234–239 (chapter 24).

Garnier, A., B. Eichhorn & C. Robion-Brunner: Impact de l’activité métallurgique au cours du dernier millénaire sur un système fluvial soudano-guinéen. Étude multi-proxy des archives sédimentaires de la vallée du Tatré (pays bassar, Togo). Impact of metallurgical activity during the last millennium on a Sudano-Guinean fluvial system. / Multi-proxy study of the sedimentary archives in the Tatré valley (Bassar area, Togo). *Géomorphologie* 24: 257–276. DOI: 10.4000/geomorphologie.12446

2017

Eichhorn, B. & C. Robion-Brunner: Wood exploitation in a major pre-colonial West African iron production centre (Bassar, Togo). *Quaternary International* 458: 158–177. <http://www.sciencedirect.com/science/article/pii/S1040618216307947>

2016

Robion-Brunner, C. & B. Eichhorn: Gestion du bois dans le cadre d’une sidérurgie intensive: le district de Fiko (pays dogon, Mali). In: Lafay, M., LeGuennec Coppens, F. & E. Coulibaly

(Eds.): *Quels regards scientifiques sur l’Afrique depuis les Indépendances?* Paris, Editions Karthala: 313–332.

Schmidt, I., G. Ossendorf, E. Hensel, O. Bubenzer, B. Eichhorn, L. Gessert, G. Gwasira, F. Henselowsky, E. Imalwa, M. Kehl, J. Rethemeyer, A. Röpke, J. Sealy, I. Stengel & M. Tusenius: New investigations at the Middle Stone Age site of Pockenbank Rockshelter, Namibia. *Antiquity* 90 (353). <https://doi.org/10.15184/aqy.2016.165>

Serneels, V., B. Eichhorn, H. T. Kiénon-Kaboré, L. N’Zebo, D. Ramseyer, E. Thiombiano-Ilboudo & A. Yéo: Origine et développement de la métallurgie du fer au Burkina Faso et en Côte d’Ivoire (5). Prospections et sondages dans la région de Yamane (Burkina Faso) et en recherches à Siola 4000 (Côte d’Ivoire). SLSA rapport annuel 2015.

2015

Huyssecom, E., S. Ozainne, C. Jeanbourquin, A. Mayor, M. Canetti, S. Loukou, L. Chaix, B. Eichhorn, L. Lespez, Y. Le Drezen & N. Guindo: Towards a better understanding of sub-Saharan settlement mounds before 1400 AD: The tells of Sadia on the Seno Plain. *Journal of African Archaeology* 13(1): 7–38.

Eichhorn, B. & C. Robion-Brunner: Wood exploitation for a major pre-colonial West African iron production centre (Bassar, Togo). Abstract. In: Ludemann, T. & O. Nelle, anthraco2015 – 6th International Anthracology Meeting. Congress Guide, abstract volume. Freiburg i. Br., ReproCenter Uni Freiburg: 54. <http://www.anthraco.uni-freiburg.de/abstract>.

Höhn, A. & B. Eichhorn: Ecological interpretation of African rainforest charcoal - is it feasible? In: Ludemann, T. & O. Nelle, anthraco2015 – 6th International Anthracology Meeting. Congress Guide, abstract volume. Freiburg i. Br., ReproCenter Uni Freiburg: 67. <http://www.anthraco.uni-freiburg.de/abstract>.

Eichhorn, B. & K. Neumann: The enigma of Iron Age plant subsistence in the Inner Congo Basin. Abstract. In: Florenzan, A. & Fornaciari, R. (Eds.) Proceedings of the IWAA8. 8th International Workshop of African Archaeobotany. Modena and Reggio Emilia, Italy. *Atti della Società dei Naturalisti e Matematici di Modena, Supplemento Atti CXLVI*: 73–75.

2014

Eichhorn, B. & K. Neumann: Holocene vegetation change and land use at Ounjougou (Mali). In: Stevens, C., Nixon, S., Murray, M.A. & Fuller, D.Q. (eds.), *Archaeology of African Plant Use*. Walnut Creek, Leftcoast Press: 83–96.

Eklom, A., B. Eichhorn, P. Sinclair, S. Badenhorst & A. Berger: Land use history and resource utilisation, 400 AD to the present, at Chibuene, southern Mozambique. *Vegetation History and Archaeobotany* 23: 15–32.

2013

Eichhorn, B., C. Robion-Brunner, V. Serneels & S. Perret: Fuel for iron – wood exploitation for metallurgy on the Dogon Plateau, Mali. In: Humphris, J. und T. Rehren (eds.), *The World of Iron*. London, Archetype Publications: 435–443.

Eichhorn, B., C. Robion-Brunner, S. Perret & V. Serneels: Iron metallurgy in the Dogon country (Mali): “deforestation” or sustainable use? In: Damblon, F. (ed.), Proceedings of the 4th International Meeting of Anthracology, Brussels 8–13 september 2008, Royal Belgian Institute of Natural Sciences. BAR International Series 2486: 57–70.

Jesse, F., Eichhorn, B. & S. Kahlheber: Archaeobotanical investigations at the Gala Abu Ahmed fortress in Lower Wadi Howar, Northern Sudan. *Sudan & Nubia* 17: 24–41.

https://issuu.com/sudarchrs/docs/s_n17_jesse_et_al

2012

Eichhorn, B.: Woody resource exploitation for iron metallurgy of the Fiko tradition: Implications for the environmental history of the Dogon Country, Mali. In: Robion-Brunner, C., Martinelli, B. (eds.), *Métallurgie du fer et sociétés Africaines. Bilans et nouveaux paradigmes dans la recherche anthropologique et archéologique*. Cambridge Monographs in African Archaeology 81. BAR S 2395, Oxford, Archaeopress, Hadrian Books: 139–148.

Neumann, K, M.K.H. Eggert, R. Oslisly, B. Clist, T. Denham, P. de Maret, S. Ozainne, E. Hildebrand, K. Bostoen, U. Salzmann, D. Schwartz, B. Eichhorn, B. Tchiengué & A. Höhn: Comment on “Intensifying Weathering and Land Use in Iron Age Central Africa”. *Science* 31, August 2012: 1040.

Garnier, A., K. Neumann, B. Eichhorn & L. Lespez: Phytolith taphonomy in the Middle to Late Holocene fluvial sediments of Ounjougou (Mali, West Africa). *The Holocene* 23(3): 416–431. doi:10.1177/0959683612463102.

2011

Vogelsang, R. & B. Eichhorn: Under the mopane tree. Holocene settlement in northern Namibia. *Africa Praehistorica* 24, Köln, Heinrich-Barth-Institut.

Lespez, L., Y. Le Drezen, A. Garnier, M. Rasse, B. Eichhorn, S. Ozainne, A. Ballouche, K. Neumann & E. Huysecom: High-resolution fluvial records of Holocene environmental changes in the Sahel: the Yamé River at Ounjougou (Mali, West Africa). *Quaternary Science Reviews* 30(5-6): 737–756.

2010

Eichhorn, B., K. Neumann & A. Garnier: Seed phytoliths in West African Commelinaceae and their potential for palaeoecological studies. *Palaeogeography, Palaeoclimatology, Palaeoecology* 298 (3-4): 300–310.

Vogelsang, R., J. Richter, Z. Jacobs, B. Eichhorn, V. Linseele & R.G. Roberts : New excavations of Middle Stone Age deposits at Apollo 11 Rockshelter, Namibia: Stratigraphy, archaeology, chronology and past environments. *Journal of African Archaeology* 8(2): 185–218.

Huysecom, E., A. Mayor, S. Ozainne, C. Robion-Brunner, A. Ballouche, L. Cissé, B. Eichhorn, A. Garnier, Y. Le Drezen, L. Lespez, S. Loukou, M. Rasse, K. Sanogo, V. Serneels, S. Soriano, R. Soulignac, N. Taibi & C. Tribolo: Le pays dogon et son passé: apports de la douzième années de recherches du programme “Peuplement humain et évolution paléoclimatique en Afrique de l’Ouest”. *SLSA Jahresbericht 2009*: 79–175.

2009

Ozainne, S., L. Lespez, Y. Le Drezen, B. Eichhorn, E. Huysecom & K. Neumann: Developing a chronology integrating archaeological and environmental data from different contexts: the Late Holocene sequence of Ounjougou (Mali). *Radiocarbon* 51(2): 457–470.

Huysecom, E., S. Ozainne, C. Robion-Brunner, A. Mayor, A. Ballouche, L. Chaix, L. Cissé, B. Eichhorn, N. Guindo, Y. Le Drezen, L. Lespez, H. Mezger, K. Neumann, S. Perret, M. Poudiougou, M. Rasse, K. Sanogo, K. Schneider, V. Serneels, S. Soriano, R. Soulignac, B.D. Traoré & C. Tribolo: Nouvelles données sur le peuplement du pays dogon: la onzième année de recherches du programme « Peuplement humain et évolution paléoclimatique en Afrique de l’Ouest ». *SLSA Jahresbericht 2008*: 71–183.

2008

Eichhorn, B., C. Robion-Brunner, S. Perret & V. Serneels: Iron metallurgy in the Dogon country (Mali): “deforestation” or sustainable use? (Abstract). In: Damblon, F. & Court-Picon, M.: Charcoal and microcharcoal. Continental and marine records. Abstracts and Programme (4th International Meeting of Anthracology, Brussels 8–13 September 2008). Geological Survey of Belgium Professional Papers 303-2008/1:62.

Huysecom, E., S. Ozainne, C. Robion-Brunner, A. Mayor, A. Ballouche, L. Cissé, N. Coulibaly, B. Eichhorn, N. Guindo, D. Keita, Y. Le Drezen, L. Lespez, H. Mezger, K. Neumann, M. Rasse, K. Sanogo, K. Schneider, C. Selleger, V. Serneels, S. Soriano, A. terrier & C. Tribolo: Peuplement humain et paléoenvironnement en Afrique de l’Ouest: résultats de la neuvième année de recherches. SLSA Jahresbericht 2007: 43–140.

2007

Eichhorn, B.: Use of firewood resources in a hyperarid environment: charcoal analysis from sites in the Skeleton Coast Park, Northern Namib Desert. In: Cappers, R.T.J. (ed.), Fields of change. Progress in African Archaeobotany. Groningen Archaeological Studies 5, Groningen, Barkhuis: 21–34. http://www.barkhuis.nl/pdfs/pagesfrom_gas05.pdf

Eichhorn, B. & R. Vogelsang: A pristine landscape? Archaeological and archaeobotanical research in the Skeleton Coast Park, north-western Namibia. In: Bollig, M., Bubbenzer, O., Vogelsang R. & Wotzka, H.-P. (eds.), Aridity, Change and Conflict in Africa. Colloquium Africanum 2, Cologne, Heinrich-Barth-Institut: 145–165.

Huysecom, E., S. Ozainne, C. Robion-Brunner, A. Mayor, A. Ballouche, N. Coulibaly, N. Guindo, D. Keita, Y. Le Drezen, L. Lespez, K. Neumann, B. Eichhorn, M. Rasse, K. Schaer, C. Selleger, V. Serneels, S. Soriano, A. terrier, B.D. Traoré & C. Tribolo: Peuplement humain et paléoenvironnement en Afrique de l’Ouest: résultats de la neuvième année de recherches. SLSA Jahresbericht 2006: 41–122.

2006

Eichhorn, B. & Y. Le Drezen: Les paléoenvironnements végétaux à Ounjougou au cours de l’Holocène. Méthodologie et résultats préliminaires. Etudes Maliennes 65 (Numéro spécial): 153–165.

Eichhorn, B.: Charcoal analysis and vegetation reconstruction in arid areas – a case study from Northern Namibia. In: Grupe, G. & J. Peters (eds.): Microscopic Examinations of Bioarchaeological Remains. Keeping a Close Eye on Ancient Tissue. Documenta Archaeobiologiae 4: 189–205.

Breunig, P., B. Eichhorn, S. Kahlheber, V. Linseele, C. Magnavita, K. Neumann, M. Posselt & N. Rupp: G(l)anz ohne Eisen: Große Siedlungen aus der Mitte des ersten Jahrtausends BC im Tschadbecken von Nordost-Nigeria. In: Wotzka, H.-P. (ed.), Grundlegungen. Beiträge zur afrikanischen Archäologie für Manfred K.H. Eggert. Tübingen, Francke: 255–270.

2005

Eichhorn, B., S. Hendrickx, H. Riemer & B. Stern: Desert roads and transport vessels from Late Roman-Coptic times in the Eastern Sahara. Journal of African Archaeology, 3: 213–229.

Riemer, H., F. Förster, S. Hendrickx, Eichhorn, B., S. Nussbaum, N. Pöllath, P. Schönfeld & G. Wagner: Zwei pharaonische Wüstenstationen südwestlich von Dakhla. Mitteilungen des Deutschen Archäologischen Instituts Abteilung Kairo (MDAIK), 61: 291–350.

2004

Eichhorn, B.: Anthrakologische Untersuchungen zur Vegetationsgeschichte des Kaokolandes, Nordwest-Namibia. Doctoral dissertation, Mathematisch-Naturwissenschaftliche Fakultät, Universität zu Köln. <http://kups.ub.uni-koeln.de/volltexte/2004/1178/>

Magnavita, C., S. Kahlheber & B. Eichhorn: The rise of organisational complexity in mid-first millennium BC Chad Basin. *Antiquity* 78 (301).
<http://antiquity.ac.uk/ProjGall/magnavita/index.html>

2003

Eichhorn, B. & N. Jürgens: The contribution of charcoal analysis to the late Pleistocene and Holocene vegetation history of north-western Namibia. In: Neumann, K., Butler, A. & S. Kahlheber (eds.), *Food, Fuel and Fields. Progress in African Archaeobotany, Africa Praehistorica 15*, Köln, Heinrich-Barth-Institut: 151–162.

2002

Eichhorn, B. & N. Jürgens: Vegetationsgeschichte und Nutzung pflanzlicher Ressourcen im Kaokoland -Stabilität oder Wandel? In: Bollig, M., E. Brunotte & T. Becker (eds.), *Interdisziplinäre Perspektiven zu Kultur- und Landschaftswandel im ariden und semiariden Nordwest Namibia. Kölner Geographische Arbeiten, 77*: 119–135.

Vogelsang, R., B. Eichhorn & J. Richter: Holocene human occupation and vegetation history in northern Namibia. *Die Erde* 133: 113–132.

2001

Albrecht, M., H. Berke, B. Eichhorn, T. Frank, R. Kuper, S. Prill, R. Vogelsang & S. Wenzel: Oruwanje 95/1: a late Holocene stratigraphy in northwestern Namibia. *Cimbebasia*, 17: 1–22.

1996

Eichhorn, B., H.P. Hahn & P. Müller-Haude: Espace naturel, techniques agraires et végétation ségétale en pays Kassena. *Berichte des Sonderforschungsbereiches 268, 7* Frankfurt am Main: 71–81.

1995

Eichhorn, B.: Ackerunkrautvegetation in der Region Tiébélé in Burkina Faso. Unpublished diploma thesis, Botanisches Institut, Johann Wolfgang Goethe-Universität Frankfurt/Main.

Online Resource 1

Katharina Neumann*, Barbara Eichhorn, Hans-Peter Wotzka, Iron age plant subsistence in the Inner Congo Basin (DR Congo), *Vegetation History and Archaeobotany*

Email: k.neumann@em.uni-frankfurt.de