

Homage to Dr Ekaterina Alekseevna Sidorchuk (1981-2019)

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On January 20, 2019, the acarological galaxy lost one of its stars to a tragic accident. Ekaterina A. (Katya) Sidorchuk had a meteoric career highlighted by outstanding palaeontological and acarological studies and collaborative contributions. She combined intelligence, energy, and creativity, and a strikingly thorough background and knowledge for such a relatively young

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scientist. She was genuinely interested in and respectful of different points of view; her breadth of knowledge and impartiality was sought by colleagues, both for collaboration and review of concepts. Katya was thoroughly fluent in English and French, as well as her native Russian. She was a highly-valued editorial board member of the journals *Acarologia* and *Zootaxa*, where she shepherded many manuscripts to a more well-written and thorough publication. At the same time, she eagerly shared with students and colleagues her enthusiasm, curiosity and knowledge concerning both extinct and extant mites.

Paraphrasing Katya's own description of her early background, in correspondence with one of us (EEL), she was born July 9, 1981 in Moscow to scientist parents and became passionately interested in living things of nearly any kind, both terrestrial and aquatic. Completing common school in 1998, she entered the Geographical Faculty of Moscow State University in 1999, with initial thoughts of entering the Department of Geomorphology, where her parents have positions. However, persuaded by her father, she started specialization in the Department of Biogeography, met her first scientific mentor, Prof. Dmitry A. Krivolutsky, and chose an area of interest – fossil oribatid mites. From there, her impressive career began, achieving degrees of Bachelors (Honors) in 2002, Masters (Honors) in 2004, and PhD in 2007 in Geography. Her PhD thesis was entitled 'Oribatid mites as bio-indicators of environmental change during the Holocene (on the modern and fossil bog communities of Northern European Plain).' While a university student, she participated in numerous field trips mostly to European parts of Russia, first with student-learning expeditions, then becoming chief of teams to the Polar Urals, Khibiny Mountains, and Karelia, Arkhangelsk, Kostroma, Vologda and Vyatka regions.

In 2008 Katya accepted a research position with Aleksandr P. Rasnitsyn in the Laboratory of Arthropoda, Palaeontological Institute, Russian Academy of Sciences, Moscow. Her appointment was quickly followed by a series of publications in collaboration with S.G. Ermilov and L.B. Rybalov on extant taxa of oribatid mites in Ethiopia. However, the focus of her research was on oribatid mite inclusions in fossil resins and more generally—in her own words—the 'development of preparation techniques, imaging, research on artifacts and properties in amber inclusions.' With her husband, Dmitry (Dima) Vorontsov, she developed unique preparation techniques for these amber inclusions, and for computer-aided photography and drawing. Katya's continued acarological growth was further supported by Olga Makarova and by research collaborators, along with intensive study and thorough understanding of the revered works of François Grandjean.

Beginning in 2010, her horizons widened through collaborative projects on fossil mites with R.A. Norton, P. Klimov, M. Bertrand, E.E. Lindquist, V.M. Behan-Pelletier, A.A. Khaustov and others. Collaborating with her was always interesting, rewarding, challenging and fun—and learning went both ways. Any one of us who taught Katya some details concerning a group of mites new to her was exposed in turn to her quick recognition of problems; she did not hesitate to correct our observations or to contest our interpretations, causing us to develop a better explanation or to admit our own error.

The impact of any scientist may be measured superficially by the number of publication titles. It is remarkable that, in a scant 11 years since her thesis, Katya authored or coauthored more than 60 papers (Rasnitsyn 2019), on an increasingly wide breadth of acarological taxa, both extant and fossil; these were primarily Oribatida, but also Heterostigmata, Labidostomatoidea, Myobioidea, Pterygosomatoidea, Tetranychosida, Tetranychidae and Astigmata. More important is how a scientist advances their field of study and affects the work of contemporaries and successors. There is no applicable metric, but Katya's papers are outstanding in substance, and innovative in graphic presentation. Her ability to prepare fossil specimens in amber for close observation, and then to discern and illustrate their minute structures was incomparable. Students of Acariformes look to F. Grandjean as having 'set the bar' for extracting and documenting the most minute details of morphology; similarly, Katya set the bar in palaeoacarology. She showed that through innovative techniques and careful observation, what was previously assumed unattainable—'Grandjeanian' quality studies of mites embedded in amber—was indeed possible. Impact is also well measured by how a scientist contributes to the home institution.



Ekaterina Alekseevna (Katya) Sidorchuk. A – enjoying a novel experience with seeds of milkweed, near Syracuse, NY (October 2012); B – at workstation, indulging in her love for music (November 2013); C – at the 14th International Congress of Acarology, in Kyoto, wearing a scarf bearing her congress poster (July 2014); D – with her husband Dmitry (Dima) Vorontsov, showing their love of photography, while visiting Luis Subías and Uma Shtanchaeva at their rural house in Mira, Spain (April 2011); E – extracting fossil resins from substrate while on a collecting trip with Dima in Taimyr, Siberia (August 2012). Photos by RAN (A), Uma Shtanchaeva (D), Dima Vorontsov (B, C, E).

Her supportive general work and leadership clearly was highly valued by the head of her laboratory, A.P. Rasnitsyn.

Katya also brought life back to many fossils by better understanding the circumstances captured by amber pieces and their milieu — good examples are her 2011 papers coauthored with P. Klimov on an enigmatic lineage of mites showing evidence of female-controlled mating and her 2018 paper coauthored with A.V. Bochkov, T. Weiterschan and O.F. Chernova on a case of mite-on-mammal ectoparasitism, both from Eocene Baltic amber. Katya's focus and depiction of morphological detail was her way of reading nature, with better perspective and interpretation of the function and life style of mites for which molecular techniques are not applicable. In turn, her better understandings of those fossil mites serve as tests for concepts based on molecular analyses.

Like all good, young scientists, Katya had a long slate of plans. She and Dima travelled world-wide—the most welcome and effective unofficial Russian ambassadors one could imagine—to participate in conferences and to visit with colleagues and their institutional collections, which in turn engendered the possibility of many interesting future projects. With one of us (EEL) she was working on a trio of papers on parasitic mites of orthopteran insects, and had plans for research on gamasine mites from Canadian amber. The rich oribatid fauna of this and other amber sources promised to occupy her in joint studies with RAN and Valerie Behan-Pelletier for years to come. Katya had a recent cross-appointment to the International Complex Research Laboratory for the Study of Climate Change, Land Usage, and Biodiversity, Faculty of Biology, Tyumen State University, and was considering a graduate teaching program in acarology, in English, there; her experience at the international Acarology Summer Program workshop at The Ohio State University, in 2014, gave her first-hand knowledge of the effectiveness and challenges of such an endeavor.

Katya's tragic and untimely loss has created a vacuum in the acarological world, and further in the hearts of her family, friends and colleagues. To honor her and to help keep her alive in our memory Dima has provided a photographic archive of their travels and activities from 2007 through 2018, available at this website <https://photos.app.goo.gl/YscMDiB7NE2mc2w39>.

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Reference

Rasnitsyn A. 2019. Deep mourning with the loss of Ekaterina Alekseevna (Katya) Sidorchuk (09.07.1981 – 20.01.2019), an excellent and promising palaeontologist. *Palaeoentomology*, 2(1):1-6.[doi:10.11646/palaeoentomology.2.1.1](https://doi.org/10.11646/palaeoentomology.2.1.1)