VERONICA TYTS

(951)377-2085 ◇ veronicatyts98@gmail.com ◇ vtyts001@ucr.edu
orcid.org/0000-0001-5574-5024

EDUCATION

PhD in Entomology **2023–Current**
University of California, Riverside
Current projects:
Molecular phylogeny of the plant bug subfamily Mirinae (Heteroptera: Miridae);
UCE-based phylogenies for Nearctic genera, biogeography of these genera and host plant evolution;
Molecular phylogeny of the plant bug tribe Dicyphini (Heteroptera: Miridae: Bryocorinae)
PI: Christiane Weirauch, Professor of Entomology, UCR

Master of Science in Biology **2020–2022**
Saint Petersburg State University (SPbSU), Department of Entomology
Diploma with distinction
Thesis: Phylogeny of the plant bug tribe Halticini (Heteroptera: Miridae) based on morphological and molecular data
Scientific supervisors:
Fedor Konstantinov, Associate Professor, SPbSU, Senior Researcher, Zoological Institute Russian Academy of Sciences (ZIN RAS)
Anna Namyatova, Senior Researcher, Head of Core Facilities Centre "Taxon", ZIN RAS, Senior Researcher, VIZR RAS

Bachelor of Science in Biology **2016–2020**
Saint Petersburg State University, Department of Entomology
Diploma with distinction
Thesis: Description of a new genus and phylogeny of the *Rhinocylapus*-complex (Heteroptera: Miridae) based on morphological and molecular data
Scientific supervisors:
Fedor Konstantinov, Associate Professor, SPbSU, Senior Researcher, ZIN RAS
Anna Namyatova, Senior Researcher, Head of Core Facilities Centre "Taxon", ZIN RAS, Senior Researcher, VIZR RAS

WORK EXPERIENCE

Research Laboratory Assistant **2023**
All-Russian Institute of Plant Protection, Saint Petersburg

Sorting and online-databasing the entomological collection of plant bugs at ZIN RAS, DNA extraction and PCR, climatic niche modeling using MAXENT, visualizing the results with Qgis, writing scripts in R for CN analyses, PCA, and visualization, scientific papers preparation.

Laboratory Technican **2023**
Zoological Institute of the Russian Academy of Sciences, Saint Petersburg

DNA extraction and PCR, supervision of new lab members.

Research Laboratory Assistant **2022**
Zoological Institute of the Russian Academy of Sciences, Saint Petersburg

DNA extraction and PCR, phylogenetic analyses using ML (RAxML, IQ-TREE) and BI (MrBayes), implementing ABGD, PTP, BPP, and GMYC tools for species delimitation, morphometric analysis in R.

Senior Laboratory Assistant **2020–2022**
Department of Entomology, Saint Petersburg State University

Creating and updating records of supplies and equipment to monitor inventory, maintenance of equipment, preparing necessary supplies for courses, and assisting during them.

Research Laboratory Assistant **2019–2021**
All-Russian Institute of Plant Protection, Saint Petersburg

Sorting and online-databasing the entomological collection of plant bugs at ZIN RAS, DNA extraction and PCR, climatic niche modeling using MAXENT, visualizing the results with Qgis and R scripts.

RESEARCH INTERESTS

Phylogenetics, phylogenomics, entomology, true bugs, host plant associations, morphological analysis, morphometrics, biogeography

PUBLICATIONS

- Namyatova, A. A., Dzhelali P. A., **Tyts, V. D.**, & Popkov A. A. (2024). Climate change effect on the widely distributed Palearctic plant bug species (Insecta: Heteroptera: Miridae). *PeerJ*, in print.
- Namyatova, A. A., & **Tyts, V. D.** (2024). Total-evidence phylogeny of the subfamily Cylapinae and the divergence dates for its subgroupings (Insecta: Heteroptera: Miridae). *Zoological Journal of the Linnean Society, zlae008*. 10.1093/zoolinnean/zlae008 (Q1)
- **Tyts, V. D.**, Namyatova, A. A., & Konstantinov, F. V. (2022). Phylogeny of the *Rhinocylapus* complex (Heteroptera, Miridae, Cylapinae, Fulviini). *Invertebrate Systematics, 36*(8), 751–779. 10.1071/IS21061 (Q1)
- Namyatova, A. A., **Tyts, V. D.**, & Bolshakova, D. S. (2022). Identification and delimitation of the trans-Palearctic *Lygus* species (Insecta: Heteroptera: Miridae) using integrative approach. *Insect Systematics & Evolution, 54*(2), 146–192. 10.1163/1876312X-bja10035 (Q2)
- **Tyts, V. D.**, Namyatova, A. A., Damken, C., Wahab, R. A., & Konstantinov, F. V. (2020). *Tatupa grafei*, a new genus and species of Cylapinae (Heteroptera, Miridae) from Brunei Darussalam. *ZooKeys, 946*, 37. 10.3897/zookeys.946.51780 (Q1)

CONFERENCES

Annual Conference of the Center for Systematic Entomology, Gainesville, FL, USA 2024
Virtual oral presentation ** marks presenter*

Namyatova, A. A.*, **Tyts, V. D.** "Total-evidence phylogeny of the subfamily Cylapinae (Insecta: Heteroptera: Miridae) and the divergence dates for its subgroupings."

Annual Youth Student Conference of the Saint Petersburg Society of Naturalists, Saint Petersburg, Russia **2023**
Oral presentation

Tyts, V. D., "Total-evidence phylogeny of the plant bug tribe Halticini (Hemiptera: Miridae: Orthotylinae)"

Young Systematists' Forum, London, England **2022**
Virtual oral presentation

Tyts, V.*, Namyatova, A., Konstantinov, F. "Morphological characters meet molecular markers, or total evidence analysis of the Halticini tribe (Insecta: Heteroptera: Miridae)"

7th Meeting of the International Heteropterists Society, Barcelona, Spain **2022**
Virtual oral presentations

Tyts, V. D.*, Namyatova, A. A., Konstantinov, F. V. "Phylogeny of the *Rhinocylapus* complex (Miridae: Cylapinae: Fulviini)"

Namyatova, A. A.*, **Tyts, V. D.**, Bolshakova, D. S. "Integrative approach to the identification and delimitation of the trans-Palearctic *Lygus* species (Heteroptera: Miridae: Mirinae)"

16th Congress of the Russian Entomological Society, Moscow, Russia **2022**
Oral presentations

Tyts, V.*, Konstantinov, F. V., Namyatova, A. A. "Morphological matrix meets molecular markers: combined data for phylogenetic reconstruction of plant bug tribe Halticini (Heteroptera: Miridae: Orthotylinae)"

Namyatova, A. A.*, **Tyts, V. D.**, Bolshakova, D. S. "Integrative approach to the identification and delineation of the trans-Palearctic species of the genus Lygus (Heteroptera: Miridae)"

III International Research-to-Practice Conference "Results and prospects of entomology progress in Eastern Europe", Minsk, Belarus **2019**
Oral presentation

Tyts, V.*, Konstantinov, F. V., Namyatova, A. A. "Cybertaxonomy: a case study of plant bug collection at the Zoological Institute, Russian Academy of Sciences"

GRANTS, AWARDS, AND SCHOLARSHIPS

Grants

Co-wrote proposal and served as senior personnel

- Research project RScF 23-24-00417 "Comparative phylogeography of trans-Palaearctic insect species using plant bugs (Insecta: Heteroptera: Miridae) as a model group", PI: A. A. Namyatova (VIZR RAS), 2023–2024, **$30,816.7**

Major contributor

- Research project RScF 20-14-00097 "Insects of Russia through digital view of collections", 2020–2022, PI: A. A. Solodovnikov (Natural History Museum of Denmark), **$291,970**
- Research project RFBR 20-14-00097 A "Studying the terrestrial insects' origin from tropics with the subfamily Cylapinae (Heteroptera: Miridae) as a target group. What is more important – tropical forest or tropical climate?", 2020–2022, PI: A. A. Namyatova (ZIN RAS), **$19,242**
- Research project RScF 19-74-00077 "Influence of climate for speciation in Holarctic with plant bugs genera as model groups (Insecta: Heteroptera: Miridae)", 2019–2021, PI: A. A. Namyatova (VIZR RAS), **$24,460**
- Research project RFBR 19-04-00662 A "Evolution of Miridae (Insecta: Hemiptera): from phylogenetic reconstructions to analysis of coevolution with plants", 2018–2020, PI: F. V. Konstantinov (SPbSU), **$16,307**

Awards

- Dean's distinguished fellowship award, UCR, 2023–2028, **$288,167.4**
- Winner of the competition of master's theses of the independent regional public organization "Saint Petersburg Society of Naturalists", 2023, **$197**
- School student award for special achievements in biology competitions, 2016, **$487**

Scholarships

- Five times winner of SPbSU academic scholarship for special achievements, 2020–2022, **$5,280**
- Vladimir Potanin Fund Scholarship, 2020–2022, **$9,744**
- Saint Petersburg government-sponsored scholarship, 2021–2022, **$588**

TEACHING EXPERIENCE

Teaching assistant **2024**
ENTM 127 "Insect Ecology", UCR

Instructor **2024**
Lectures, laboratories, and field practice at the international True Bug Short Course, UCR

Teaching assistant **2022**
Developed exams for bachelor's "Theory of evolution" course at SPbSU

Teaching and lab assistant **2022**
Zoological Institute RAS course "Methods of molecular phylogenetics and genetic data application in the analysis of biodiversity"

Instructor **2022**
Entomological field practice for bachelor's students at SPbSU

Lecturer **2018**
Botany course for gifted middle and high school students in Ecological and Biological Center "Krestovsky Island"

Mentor
Mentee: Daria Bolshakova (SPbSU B.Sc., M.Sc.)

FIELD EXPERIENCE

South Africa, Western Cape **1 Sep – 31 Sep 2024**

USA, California, Quail Ridge Reserve, Blue Oak Ranch Reserve, Hastings Natural History Reservation **1 Jul – 6 Jul 2024**

USA, California, weekly one-day field trips **Mar – May 2024**

Russia, Khanty-Mansi Autonomous Okrug, Yugansky Nature Reserve **26 Jul – 2 Aug 2023**

Russia, Krasnoyarsk Krai, Krasnoyarsk Pillars National Park, Sayano-Shushenski Nature Reserve, Shushensky Bor National Park **14 Jul – 26 Jul 2023**

Russia, Republic of Dagestan, Dagestan Nature Reserve **31 May – 9 June 2023**

Russia, Kaliningrad region, Curonian Spit National Park **14 Aug – 20 Aug 2022**

Russia, Republic of Karelia, Sortavala district, incl. Ruskeala mountain park **17 Jun – 20 Jun 2022**

Russia, Murmansk region, Kandalaksha Nature Reserve **23 Jul – 31 Jul 2021**

Russia, Belgorod region, Belogorye Nature Reserve **13 Jul – 25 Jul 2019**

Russia, Pskov region, Sebezhsky National Park **29 Jun – 10 Jul 2019**

PUBLIC TALKS AND INTERVIEWS

Interview with SPbSU journalists for "Most" channel and news article "Entomologists from St Petersburg University discover a rare species of tropical Heteroptera with long antennae" **2019**

Interview for local news channel "78". "Entomologists from St Petersburg University describe a rare true bug species" **2019**

PUBLIC ACTIVITIES AND LEADERSHIP EXPERIENCE

Riverside Insect Fair, Riverside, CA **2024**

Volunteer coordinator of regional biology competitions in SPbSU and all-Russian SPbSU olympiad in biology **2018–2023**

Judge at regional biology competitions in SPbSU and All-Russian SPbSU olympiad in biology **2018–2023**

Member of SPbSU academic scholarship for special achievements student committee, which was in charge of criteria evaluation and checking of applications **2016–2022**

Elected representative of my class and active member of Student Council of Biological faculty **2016–2022**

Class president for 6 years, SPbSU **2016–2022**

Organizer of annual fall and spring charity fair "BioYarmarka" to raise money for SPbSU botanical garden **2018–2021**

Organizer of annual photography exhibitions "Ego sum biologus", SPbSU **2016–2021**

Head of Student Council of Biological faculty, SPbSU **2019–2020**

Best graduate of the year in social activity at SPbSU **2020**

Participant in the TV charity program "Angel's Day" on channel "5" for orphans. Introduced entomology to an aspiring young scientist wanting to study insects. This event was shown on television to help him find new parents. **2020**

Two times second-degree prizewinner in a team, All-Russian Student Biotournament **2017, 2018**

Head of the Youth Organizing Committee of Ecological and Biological Center "Krestovsky Island" in charge of organizing regional biology competitions for school students, such as Biopractice, Young Biologist Tournament, School Student and St Petersburg city olympiads in biology **2017–2018**

Organizer/leader of ecology children's camp "Zerkalny" **2018**

Judge and organizer of school student conference "Scientists of the Future" **2018**

SKILLS

- Programming languages: R, Python, bash
- Worked with several Linux-based servers
- DNA extraction, PCR, agarose gel electrophoresis, NGS library preparation
- Phylogenetic reconstructions using parsimony, ML, and Bayesian inference methods
- Statistical and multivariate (incl. morphometric) analyses and data visualization in R
- Bioinformatics methods such as processing of sequences, creating alignments, processing NGS data, de novo genome assembling and annotation, analysis of protein sequences using BLAST, HMMER, and UniProt, UCE loci extraction and processing
- Climatic niche modelling (MAXENT, ENMTools, ENMeval)
- Species delimitation tools (ABGD, PTP, BPP, GMYC)
- Document preparation using LaTeX
- Adobe Photoshop, Illustrator

- Strong entomological and botanical (mostly floristics) background
- Entomological collection maintenance and digitizing, e.g. working with online-databases

LANGUAGES

- Russian (native)
- English (fluent)
- German (beginner)

ADDITIONAL INFORMATION

Have been taking vocal lessons for 7 years and have won numerous all-Russian and regional singing contests.