

ST. PETERSBURG STATE UNIVERSITY
Faculty of Biology
Faculty of Philosophy
RUSSIAN ACADEMY OF SCIENCES
Saint Petersburg Scientific Center
St. Petersburg Branch of the Institute of the History
of Science and Technology named after S.I. Vavilov
Library of the Academy of Sciences
Komarov Botanical Institute
Zoological Institute
Institute of Cytology
Sechenov Institute of Evolutionary Physiology and Biochemistry
VAVILOV SOCIETY OF GENETICISTS AND SELECTIONERS
ST. PETERSBURG ASSOCIATION OF SCIENTISTS AND SCHOLARS
ST. PETERSBURG BRANCH OF THE NATIONAL COMMITTEE ON THE HISTORY AND
PHILOSOPHY OF SCIENCE

CHARLES DARWIN AND CONTEMPORARY SCIENCE

Two International Conferences:

I. CHARLES DARWIN AND MODERN BIOLOGY

(September, 21-23, St. Petersburg)

II. EVOLUTIONARY THEORY: BETWEEN SCIENCE AND IDEOLOGY. HISTORICAL, PHILOSOPHICAL AND METHODOLOGICAL PROBLEMS OF EVOLUTIONARY THOUGHT

(September, 23-25, St. Petersburg)

St. Petersburg

2009

President of the organizing committee:

Vice-President of RAS, Chairman of the Presidium of the SPbRC RAS, Noble Prize winner, Academician **Zhores I. Alferov**

Chairmen of the organizing committee:

Chief Pro-Rector for Academic Affairs and Research, Dean of Faculty of Biology, Professor **Igor A. Gorlinsky**

Vice-Chairman of the Presidium of the SPbRC RAS, Director of the St. Petersburg Branch of the Vavilov Institute of General Genetics, Head of Department of Genetics and Selection of SPSU, Academician **Sergei G. Inge-Vechtomov**

Director of the St. Petersburg Branch of the Institute of the History of Science and Technology named after S.I. Vavilov, Professor **Eduard I. Kolchinsky**

Chairmen assistants:

Mikhail B. Konashev, Cand. Sc. Biology

Tatiana I. Yusupova, Cand. Sc. History

Academic secretaries:

Ludmila A. Dzhaparidze, Cand. Sc. Biology

Anatolii V. Polevoi, Cand. Sc. Biology

Anastasia A. Fedotova

Conferences are financially supported by Russian Foundation for Basic Research (projects 09-06-06086-g; 09-04-06078-g)

Book exhibitions devoted to 200-years anniversary of Charles Darwin and 150 years of his book “*The Origin of Species*” are being held in the Library of the Academy of Sciences and its Division in the St. Petersburg Branch of the Institute of the History of Science and Technology named after S.I. Vavilov.

Registration of participants:

September 20, Sunday

16:00-19:00

Conference Hall of the St. Petersburg Branch
of the S.I. Vavilov Institute for the History
of Science and Technology
Universitetskaya naberezhnaya, 5/2

September 21, Monday

8:15-10:00

11.30 -12.00

Assembly Hall of the St. Petersburg State
University
Universitetskaya naberezhnaya, 7

OPENING CEREMONY

Devoted to the 200 years anniversary of Charles Darwin and
150 years anniversary of the release of “*The Origin of Species*”

September 21, Monday

Assembly Hall of the St. Petersburg State
University
(Universitetskaya naberezhnaya 7)

9:00 – 19:00

Welcoming addresses

9.00-9.30

Chairs: Igor A. Gorlinsky, Sergei G. Inge-Vechtomov, Eduard I. Kolchinsky

Welcome from

President of the Organizing Committee

Vice-President of RAS, Chairman of the SPbRC RAS, Noble Prize winner,
Academician **Zhores I. Alferov**

Rector of the St. Petersburg State University prof. **Nikolai M. Kropachev**

Academic-secretary of the Biological department of RAS, Academician **Aleksei Yu. Rozanov**

Chairman of the Committee of Science and Education of the St. Petersburg Government **Andrei S. Maksimov**

Chairman of the Commission of Public Health and Ecology of the St. Petersburg Assembly,
Prof. **Oleg E. Sergejev**

HM Consul General in St. Petersburg **Mr. William Elliott**

PLENARY SESSION I

9:45–14:00

Time-limit for oral presentation: 25 minutes

Chairs: Igor A. Gorlinsky, Sergei G. Inge-Vechtomov, Eduard I. Kolchinsky

Kolchinsky, Eduard Israilevich (Russia)

Charles Darwin’s anniversaries in socio-cultural and cognitive contexts

Gall, Yakov Mikhailovich (Russia)

The development of Charles Darwin’s evolutionary theory

Shaffer, Elinor (UK)

The reception of Charles Darwin in Europe: The making of Darwin’s name, 1859-2009

Inge-Vechtomov, Sergei Georgievich (Russia)

Variability, matrix principle and evolutionary theory

Kolchanov, Nikolai Aleksandrovich (Russia)

Evolution of molecular-genetic systems

Chernoff, Yury O. (USA)
Protein-based inheritance and evolution

Baranov, Vladislav Sergeevich (Russia)
Evolution, gene polymorphism and hereditary diseases

14:00-15:00 Lunch

PLENARY SESSION II

15:00–19:00

Chairs: Archil K. Dondua, Aleksei S. Severtsov

Natochin, Yurii Viktorovich (Russia)
From "*The Origin of Species*" to the origin of life

Rozanov, Aleksei Jurjevich (Russia)
First steps in evolution

Severtsov, Aleksei Sergeevich (Russia)
Ecological-evolutionary mechanisms of the development of aromorphosis

Cohen, Claudine (France)
Darwinism and human evolution: the development of paleontology in the XX century
break 15 min

Svidersky, Vladimir Leonidovich (Russia) The flightin evolution of insects

Tikhonovich, Igor Anatoljevich, Provorov Nikolai Aleksandrovich; Vorobyov, Nikolai Ivanovich (Russia)
The evolution of symbiotic systems: preset selection controlled by pre-adaptations and partners feedbacks

Veselkin, Nikolai Petrovich (Russia)
The evolution of means of chemical regulation

Gamalei, Yury Vladimirovich (Russia)
The evolution of plant cell systems

19.15 – Drink Reception (for Conference participants)

September 23, Wednesday

Great Conference Hall of the St. Petersburg
Scientific Center of the RAS
Universitetskaya naberezhnaya 5

9:30-12:30

PLENARY SESSION III

Time-limit for oral presentation: 25 minutes

Chairs: Nikolai P. Veselkin, Eduard A. Tropp

Ruse, Michael (USA)
Is Darwinism past its "Sell By" date?

Yudin, Boris Grigorjevich (Russia)
"The origin of species" as an explanatory theory

Stegniy, Vladimir Nikolajevich (Russia)
Charles Darwin and modern biology

Yusufov, Abdumalik Gasamudinovich, Magamedova, Madina Abdulmalikovna (Russia)
Charles Darwin's evolutionary theory in the system of biological education

Mina, Mikhail Valentinovich (Russia)
The evolution of the of species concept from Darwin to nowadays: the progress or roaming?

Kozintsev, Alexander Grigorievich (Russia)
The early history of *Homo sapiens*, population genetics, and evolutionary theory

12:30-13:00

Presentation of the Journal "Studies in the History of Biology"
Chief-Editor Eduard I. Kolchinsky and members of the Editorial Board

13:00-14:00 Lunch

14.00-18.00

PLENARY SESSION IV

Chairs: Yurii V. Gamalei, Boris G. Yudin

Yankovsky, Nikolai Kazimirovich; Borinskaya Svetlana Aleksandrovna (Russia)
Evolution of human gene pool: population and locus-specific processes

Jorland, Gérard (France)
Natural selection in the light of contemporary anthropology, demography and ethology

Zhouravleva, Galina Anatolijevna (Russia)
The origin of novel proteins by gene duplication and domain shuffling

Ivanter, Ernest Viktorovich (Russia)
Extraneous populations of polytypical species as exclaves of microevolution

Coffee-break

Borkin, Lev Yakovlevich, Litvinchuk, Spartak Nikolaevich (Russia)
Species and speciation of animals: molecular-genetic evaluation

Lukhtanov, Vladimir Aleksandrovich (Russia)
The role of natural selection for the origin of species: ideas of Darwin and Dobzhansky and the modern models of speciation

Kutschera, Ulrich (Germany), Levit, Georgy S. (Canada/Germany)
"Expanded synthesis" and "Generalized Darwinism": What are the principal differences between these two theories?

18.00-19.00

Key-note speaker: Margulis, Lynn (USA)

Symbiogenesis: Source of evolutionary novelty

Chairs: Sergei G. Inge-Vechtomov, Eduard I. Kolchinsky

PARALLEL SESSIONS

September 22, Tuesday

Great Conference Hall of the SPbRC RAS

10:00-14:00

Universitetskaya naberezhnaya 5

SECTION I. GENETICS AND MICROEVOLUTION

Time-limit for oral presentation: 15 min; Q.-A.: 5 min

Chairs: Sergei G. Inge-Vechtomov, Ludmila A. Dzhaparidze

Golubovsky, Mikhail Davidovich (USA)

Facultativeness principle, generalized genome concept and hereditary variation

Khromov-Borisov, Nikita Nikolajevich (Russia)

Half a century with the central dogma in molecular biology

Gorbunova, Victoria Nikolajevna (Russia)

The evolution of prokaryote and eukaryote genomes

Vasilevich, Vladislav Ivanovich (Russia)

Natural selection in plant communities

Kotenkova, Elena Vladimirovna, Voznesenskaya Vera Vasil'evna (Russia)

The mechanisms of isolation and integration of closely related forms of rodents at different stages of divergence: from behavior to receptors

Shatunovsky, Mikhail Iliyeh (Russia)

Evolutionary-ecological aspects of interspecies variability in fishes

Mironova, Tatiana Aleksandrovna; Sapelnikov, Sergei Feodorovich (Russia)

Relative variation of craniological characters of *Microtus agrestis* L. and forms of *Microtus arvalis* s.l.

Kipyatkov, Vladilen Evgenievich (Russia)

The group selection concept from Charles Darwin to nowadays

Marvin, Alexander Mikhailovich; Davidenko, K.A.; Marvin, N.A.; Krysova, L.V.; Antosjuk, O.N. (Russia)

Long directional selection as a source of genetic variation

Ermakov, Evgenii Leonidovich (Russia)

Cyclic selection by quantitative characteristics in natural population of drosophila

Trapezov, Oleg Vasiljevich (Russia)

The effects of destabilizing selection. American mink (*Mustela vison* Schreber, 1777) as a model

15:00-19:00

Chairs: Galina A. Zhuravleva, Mikhail D. Golubovsky

Kurbatova, Olga Leonidovna (Russia)

The problem of relaxing of natural selection in human populations

Udina, Irina Gennadjevna (Russia)

Differentiation of human native populations of Eurasia, East Asia and America by autosomal SNP/STR-systems

Georgievsky, Aleksandr Borisovich (Russia)

Why babies are fat (to the theory of stabilizing selection)

Ilyinsky, Yuri Yurjevich; Gunbuin, Konstantin Vladimirovich; Zakharov, Ilya Kuzmich (Russia)

Interaction of symbiotic system *Drosophila melanogaster* – *Wolbachia*: genetics and evolution

Chadov, Boris Feodorovich; Feodorova, Nina Borisovna (Russia)

Energetic destination of a living matter and the process of evolution

Obukhova, Natalia Jurjevna (Russia)

Polymorphism of plumage color of synanthropic rock-pigeons as a factor of retention of population sustainability

Sokolov, Ivan Dmitrievich; Medved, Olga Mikhailovna; Sigidinenko, Ludmila Ivanovna;

Sokolova, Elena Ivanovna (Ukraine)

Gene mutations and re-combinations as factors of experimental evolution of *Arabidopsis thaliana* (L.) Heynh. (family Brassicaceae)

Kharchenko, Viktoria Evgenievna (Ukraine)

The usage of homological structures for definition of morphological characteristics of inflorescences in the Brassicaceae family

General discussion

September 22, Tuesday

Conference Hall Zoological Institute of the
RAS
Universitetskaya naberezhnaya, 1

10:00-14:00

SECTION II. SPECIES AND SPECIATION

Time-limit for oral presentation: 15 min; Q.-A.: 5 min

Chairs: Oleg N. Pugachev, Lev Ya. Borkin

Malygin, Vasilii Mikhailovich (Russia)

Allopatry as an essential condition for speciation of mammals

Sytin, Andrey Kirillovich (Russia)

Darwin's regularities of variability of big genus and the correlation of gradual and saltational evolution in a genus of *Astragalus* L. (Fabaceae)

Rubtsov, Aleksandr Sergeevich (Russia)

Causes, dynamics and evolutionary role of natural hybridization: the case of interrelationship of Yellowhammer (*Emberiza citrinella*) and Pine Bunting (*E. leucocephala*)

Grebelyi, Sergei Dmitrijevich (Russia)

The reality of non-Darwinian speciation by means of saltation in the light of modern knowledge of genetics and genomics

Potapova, Elena Georgijevna (Russia)

The development of morphological adaptations at early stages of taxonomical differentiation

Suntsov, Viktor Vasiljevich; **Suntsova**, Nina Ivanovna (Russia)

Macro- and microevolution, saltations and gradations: the problem of the origin and evolution of the plague agent *Yersinia pestis*

Coffee-break

Kruglikova, Svetlana Borisovna (Russia); **Bjorklund** Kjell R. (Norway); **Anderson** O. Roger (USA)

Evolution of communities and recent speciation of Radiolaria-Polycystina of the Arctic Ocean

Gromov, Vladimir Stepanovich (Russia)

Parental care, tactile stimulation and evolution of sociality in rodents

Soskov, Yury Dmitrijevich; **Kochegina**, Albina Anatoljevna (Russia)

Charles Darwin's divergence scheme as a foundation of biological laws

Gontar, Valentina Ivanovna (Russia)

Evolutional trends of *Bryozoa* as an illustration of some Darwin's thesis

Fridman, Vladimir Semenovich (Russia)

Factors of evolution of communicative signals of vertebrates

September 22, Tuesday

Conference Hall Zoological Institute of the
RAS
Universitetskaya naberezhnaya 1

15.00-19.30

SECTION III. MACROEVOLUTION

Time-limit for oral presentation: 15 min; Q.-A.: 5 min

Chairs: Archil K. Dondua, Sergei V. Rozhnov, Ernest V. Ivanter

Rozhnov, Sergei Vladimirovich (Russia)

The early evolution of metazoan higher taxa: paleontological evidence

Mamkajev, Yurii Viktorovich (Russia)

Morphological concept of natural selection

Ivantsov, Andrei Yuriyevich (Russia)

The reliability of reconstruction is the core problem in the paleontology of Precambrian Metazoa

Sumina, Evgenya Leonidovna (Russia)

To the question of development of morphogenetic processes before the emergence of first eukaryote

Serezhnikova, Ekaterina Anatoljevna (Russia)

The early stages of evolution of Metazoa: anchoring adaptations of Vendian sedentary organisms

Markov, Alexander Vladimirovich; Korotayev, Andrey Vitalyevich (Russia)

The dynamics of taxonomic diversity in the Phanerozoic biota: facts and models

Savina Margarita Vasiljevna; Samoilov, Vladimir Olegovich (Russia)

The bioenergy of poikilothermic vertebrates

Saveljev, Sergei Viacheslavovich (Russia)

The origin of the brain of terrain vertebrates

Kozlov, Andrei Petrovich (Russia)

Populations of tumor-bearing organisms as transitional forms between species of organisms at different stages of progressive evolution

Ivanova, Alexandra Nikolajevna (Russia)

Study of carnivorous plants: from Charles Darwin to nowadays

Kolomiitsev, Nikolai Petrovich; Poddubnaja Nadezhda Yakovlevna (Russia, Cherepovets)

The delay in materialization of genetic information as a factor of adaptive evolution

Ilyin, Igor Nikolaevich (Russia, Moscow)

Development of Charles Darwin's ideas in Russian investigations of Lepididae (Crustacea)

Savostjanov, Gennadii Aleksandrovich (Russia)

Moving towards theoretic developmental biology

Nechayeva, Olga Vasiljevna (Ukraine) Some heterochronies in early embryogenesis of minke whale (*Balaenoptera acutorostrata*) and their adaptive and evolutionary importance

General discussion

September 22, Tuesday
10.00-14.00

Small Hall of the SPbRC RAS
Universitetskaya naberezhnaya 5

SECTION IV. THE MAKING OF DARWIN'S THEORY AND ITS PERCEPTION IN THE SECOND HALF OF THE 19TH – BEGINNING OF THE 20TH CC.

Time-limit for oral presentation: 15 min; Q.-A.: 5 min

Chairs: Eduard I. Kolchinsky, Uwe Hossfeld, Manfred Heinemann

Grigoryan, Nora Andrejevna (Russia)

The idea of evolution in physiology: I.M. Sechenov, I.P. Pavlov, L.A. Orbeli

Tammiksaar, Erki (Estonia)

New aspects in the world view of Karl Ernst von Baer affecting his attitude towards Darwin's hypothesis of natural selection

Sukhova, Natalia Georgijevna (Russia)

The problem of species in A.F. Middendorf's works

Müller-Wille, Staffan (UK); **Orel**, Vitezslav (Czechia)

Mendel and Darwin on Heredity

Beregoy, Natalia Evgenjevna (Russia)

Charles Darwin's views on vivisection and antivivisection

Konashev, Mikhail Borisovich, **Polevoi** Anatoliy (Russia, St. Petersburg)

First Russian translations of "*The Origin of Species*"

Fokin, Sergei Ivanovich (Russia, St. Petersburg)

The unknown correspondence between two classics of evolutionary comparative embryology - A.O. Kowalevsky and I.I. Metschnikoff and Professor N.P. Wagner

Heinemann, Manfred (Germany, Hannover)

Controversies about Darwin's concept at Prussian higher-schools: The case of Prof. Hermann Müller ("Affen-Müller") and the freedom of teaching Biology

Fedotova, Anastasia Aleksejevna (Russia)

The harmony in Nature and the struggle for existence

Philipson, Joakim (Sweden)

Darwinism and Zionism: Ahad Ha'am and Joseph Klausner

Liakhova, Ekaterina Sergejevna (Russia)

The influence of the evolutionary theory on the development of psychology and psychophysiology

September 22, Tuesday
15.00-19.00

Small Conference Hall of the SPbRC RAS
Universitetskaya naberezhnaya 5

SECTION V. EVOLUTIONARY BIOLOGY IN THE XX CENTURY

Time-limit for oral presentation: 15 min; Q.-A.: 5 min

Chairs: Sergei I. Fokin, Georgy Levit

Schmutz, Hans-Konrad (Switzerland)

Progress and retention in physical anthropology around 1900

Huneman, Philippe (France)

The causal status of natural selection

Levit, Georgy S. (Canada/Germany); **Hossfeld**, Uwe (Germany)

The Selectionist Turn of Bernhard Rensch (1900-1990) through the Prism of Panpsychistic Identism.

Pchelov, Evgenii Vladimirovich (Russia)

The eugenics in Russia and the development of genealogical method in human genetics

Tomashevich, Tatiana Vladimirovna (Russia)

Creative activities of two eugenists-anthropologists V.V. Bunak and M.V. Volotsky

Ermolajev, Andrei Igorevich (Russia)

The competition between Darwinism and Lamarckism in Russian genetics by example of V.N. Slepkov's works

Kasatkin, Mikhail Vasiljevich (Russia)

B.M. Zavadovsky's evolutionary views

Samokish, Anna Viktorovna (Russia)

The teaching of evolutionary theory in school in Russia and the USSR in 1860-1941

Kouprianov, Alexei V. (Russia)

The Soviet "Creative Darwinism" (1930s - 1950s): From a selective reading of Darwin's works to the qualitative leaps and spontaneous transmutation of species

Sandstrom, Gregory (Canada, Russia)

The Problem of evolution: natural or social

Gomankov, Alexei Vladimirovich (Russia)

Evolutionary progress: critics and apology of Darwinism

Kaldis, Byron (Greece)

Darwinian Inheritance? Natural kindness and sociobiology

Novozhenov, Yurii Ivanovich (Russia)

Charles Darwin as an originator of the sociobiology

SECTION VI. PHILOSOPHICAL, METHODOLOGICAL AND CULTUROLOGICAL ASPECTS OF EVOLUTIONARY THOUGHT IN THE XXI CENTURY

Room 24, Department of Philosophy, St.
Petersburg State University
Mendelevskaya linija 7

September 24, Thursday
10:00-14:00

I session. Theory of evolution and natural sciences

Time-limit for oral presentation: 15 min; Q.-A.: 5 min

Chairs: Aleksandr V. Govorunov, Vladimir G. Borzenkov

Lisejev, Igor Konstantinovich (Russia)
Coevolutional thinking: from biology to culture

Karavajev, Eduard Feodorovich (Russia)
Theoretical-gaming modeling of evolution and its wide scientific implication

Borzenkov, Vladimir Grigorjevich (Russia)
Moving towards the new synthesis

Astafjev, Anatolij Konstantinovich (Russia)
On the evolutionary approach to the ecology

Efimov, Yurii Ivanovich (Russia); Naletov, Yurii Anatoljevich (Russia)
Darwinism and "evolutionary nihilism"

Konashev, Mikhail Borisovich (Russia)
Charles Darwin's evolutionary theory as a special evolutionary theory

Lubomirov, Dmitrii Evgenijevich (Russia)
Ch. Darwin and modern evolutionary paradigm

Mozelov, Anatolij Pavlovich (Russia)
Darwinism and Neo-Darwinism

Bogatykh, Boris Aleksandrovich (Russia)
Fractal-epigenetic method in the evolutionary theory

Kliucharev, Valentin Viktorovich; Kliuchareva, Svetlana Viktorovna (Russia)
Progressive selection in self-developing systems

Petrova, Ekaterina Viktorovna (Russia)
Adaptation as one of the factors of evolution

Kazansky, Alexander Borisovich (Russia)
Advanced understanding of inheritance and natural selection: niche construction and stigmergy

15:00-18:30

II session. Evolutionary theory and ideology (philosophy of science, global evolutionism, religion)

Time-limit for oral presentation: 15 min; Q.-A.: 5 min

Chairs: Aleksei S. Mamzin, Igor K. Lisejev

Mamzin, Aleksei Sergejevich (Russia, St. Petersburg)

About the integrative role of the evolutionary theory in contemporary science

Uvarov, Mikhail Semenovich (Russia)

Christian and Islamic criticism of Darwinism in contemporary culture

Govorunov, Aleksandr Vasiljevich (Russia)

Evolutionary and humanitarian discourses about a man

Khen, Julia Vonkhovna (Russia)

Natural selection and the problem of kakogenesis of "human species"

Krulikovsky, Anatoliy Ippolitovich (Russia)

About scientific and non-scientific grounds of Anti-Darwinism

Baksansky, Oleg Evgenjevich (Russia)

Non-Darwinian theories of evolution

Fedyajev, Aleksandr Petrovich (Russia)

Darwinism and contemporary criteria of scientific character

Gnatik, Ekaterina Nikolajevna (Russia)

The problem of conscience from the point of view of evolutionism

General Discussion

September 25, Friday

Room 24, Department of Philosophy, St.
Petersburg State University
Mendelevskaya linija 7

10.00-13.00

III session.

Evolutionary theory and ideology (philosophy of science, global evolutionism, religion)

Time-limit for oral presentation: 15 min; Q.-A.: 5 min

Chairs: Boris V. Markov, Aleksei V. Govorunov

Markov, Boris Vasiljevich (Russia)

The problem of a human being in works of Darwin and Nietzsche

Strelchenko, Vasily Ivanovich (Russia)

Charles Darwin: the epistemology of evolutionary-historic concept of anthropogenesis

Kuznetsov, Lev Aleksandrovich (Russia)

The ecology and creative work of Charles Darwin

Babynin, Eduard Viktorovich (Russia)

The irregularity of cause-effect relationship in the book "*The Origin of Species*" by Charles Darwin

Bydanov, Viktor Evgenjevich (Russia)

Darwinism as a research program in contemporary gnoseology

Dobroliubova, Irina Valerjevna (Russia)

Ideological evaluation of Charles Darwin's theory by V.I. Vernadsky

Kovtun, Mikhail Fotijevich (Ukraine)

Darwinism and creationism in the XXI century

Solovjev, Valeriy Dmitrijevich (Russia)

About evolutionary changes of cognitive apparatus of a contemporary human being

Tiguntsev, Nikita Stepanovich (Russia)

About non-universal evolutionism