EDUARD I. KOLCHINSKY, *Biologija Germanii i Rossii-SSSR v uslovijakh sozoal'no-politicheskikh krizisov pervoj poloviny XX veka* [*Biology of Germany and Russia-USSR. Under Conditions of Social-Political Crisis of the First Half of the XX Century (between Liberalism, Communism and National-Socialism)*], St. Petersburg: Nestor-Istorija Publishers, 2006, 637 pp., illus., no price stated.

Kolchinsky is a well-established Russian historian of science, who in 1977 co-authored with K. M. Zavadsky (1910-1977) a classic work on evolutionary theory entitled *Evolution of Evolution*. Since that time he wrote and edited several books on the history of biology including several collections of papers devoted to the *German-Russian Links in Biology and Medicine*. The reviewed volume seems to be an attempt to generalize the materials Kolchinsky gathered during his scientific career. This volumenous book follows several general lines. Perhaps the most general thesis of the book proves that the history of evolutionary biology proceeded along the similar lines in all social-political systems and that the ideological environments cannot irreversibly distort the course of science. The actual reasons for certain behavior of the scientific community 'should be found in the science itself or, better to say, in the paradigm dominating at the certain moment' (p. 56). An example is the Synthetic Theory of Evolution (STE), which brought about similar concepts and methods in the liberal world as well as in the totalitarian countries like Germany and USSR: 'In whole, biology in Germany developed in the same directions as in other countries', the author argues, 'although may be by an extended front' (p. 587).

The thesis on parallel and independent development of evolutionary theory in various countries is connected with the implicit and explicit defense of the STE, which the author whish to protect from the attempts of revision. At the same time, another intention of the book is to demonstrate the specificity of biology in different cultural environments complemented by the investigation into the German-Russian cooperation in biology and allied sciences.

The book consists of four chapters (1. The dynamics of biology, power, society and ideology under totalitarian regimes, 2. Biology in Germany and Russia on the eve of the revolutionary upheavals, 3. The beginning of dialectisation and nazification of biology, 4. Biology between Communism, Nazism and Liberalism), whereas the first chapter explains the general objectives and proposes the general periodisation of the history of biology in both countries.

In accordance with the proposed periodisation, the second chapter analyses the period between 1870 and 1918 and investigates into the appearance of holism and social Darwinism in the German lands. Special attention is expectedly paid to the growth of racial theories in Germany. The Jena zoologist Ernst Haeckel appears to be one of the central figures in the story: 'Haeckel was very aware of the authorities' demand and articulated on behalf science what they wanted to hear […] Proceeding from the German romantism, Haeckel developed the monist philosophy with the objective of criticizing the very foundations of European civilization, first of all humanism and liberalism' (p. 119-120). His classification of 'human species' was anyway evidently racist since he placed species of Europeans *H. Leucodermus* on the top of the racial hierarchy. 'Haeckel', Kolchinsky concluded, 'was the first biologist, who articulated a program supporting racial imperialism and usurpation of new territories by the powerful, rapidly growing but overpopulated Germany' (p. 133). Whereas in the German speaking countries Darwinism stimulated the rise of the racist theories, in Russia it contributed to the strengthening of Marxist ideology. 'Marxism is Darwinism applied to the social sciences' claimed an influential Russian Marxist Georgy

Plekhanov. Darwinism became very popular in Russia, because of several social-political reasons, but first of all due to the very traditions in Russian biology. The unique territory of Russia made it possible for biologists to investigate into the strikingly diverse ecosystems analyzing adaptative processes in the unlike environments (p. 177). This was complemented by the bias to the theoretical generalizations, the feature shaped in Russian under the influence of German romantism. At the same time the resistance of the Orthodox Church to evolutionism was not so strong as in the Catholic lands. 'There was no spectacular discussions between the Church and evolutionary biologists' in Russia, because the Chruch took a distance to the scientific discussion, whereas scientists were not interested in theological debates (p. 178). A characteristic feature of Russian science, Kolchinsky emphasizes, was an attempt to attach to science a 'transcendental' moral value. Science was rather a mission than profession. The social-political situation in Russia was not only under the influence of Darwinian evolutionism, but was also influenced by the ideas cooperation and symbiosis propagated by the prince P. A. Kropotkin, A. S. Famintzyn and K. S. Merezhkovsky (p. 183).

Against this background Kolchinsky poses a question on the existence of 'Russian racial theory'. In fact, some authors propagated concepts, which could be interpreted as racial such as N. J. Danilevsky's theory of on 'cultural-historical types'. Based on Karl E. von Baer's typology Danilevsky developed a view that the Slavonic 'type' is the supreme product of cultural and biological evolution. Yet the majority of Russian anthropologists 'claimed that all races and nations belong to a single biological species and rejected the ideas of German nationalists' (p. 227).

General tendencies in Russia and Germany, the author summarizes, were similar. Beginning with the 1860s and through the whole second half of the 19th century biology became highly ideologised and politicized in both countries. This proves the thesis on the close connection between science and social-cultural environment. For instance, by that time holism, social Darwinism and racial hygiene became wide spread in Germany, whereas reflexology, mutualism and symbiogenesis won influence in Russia (p. 230).

The third chapter describes 'The beginnings of dialectisation and nazification of biology' in the Soviet Union and in Germany correspondingly. After the WWI both lands experienced economical and social-political crisis. In the Weimar Republic (Germany) a new class of scientists came into existance, the so-called experts, which were more practically oriented than their predecessors-'mandarins'. The experts became influential, for instance, in eugenics, which they tried to make into a new social technology. This ultimately led to the institutionalization of eugenics in the Weimar Republic (pp. 347-353). On this way eugenics left academic circles and penetrated radical political movements (p. 238), whereas in Russia, eugenics remained a part of scientific genetics. Besides, the 'experts' actively participated in the political process and often joined political parties.

In Russia, the majority of scientists, and especially the memebrs of the Academy of Sciences, advocated liberal views and tried to resist to the new Bolshevik authorities, which came into power in October 1917. Ultimately, the biologists, which survived the repressions and the Civil War, were involved into collaboration with the authorities, independetly of their political convictions. Many scientists, such as the biogeochemist V.I. Vernadsky or the President of the Academy S. F. Oldenburg, believed that only science can rescue the country from the disaster and supported scientism propagated the Bolshevik's (p. 250). Biology and evolutionary theory enjoyed a especial support of new authorities in Russia since 'Darwinism was declared an official scientific founda-

tion of new ideology' (p. 273). It was a reason for flourishing institutionalization of biology in the initial period of formation of the USSR (p. 372).

The history of science in the USSR and Germany between the World Wars, Kolchinsky concludes, brought many politicians to the idea that organization and financial support of science are only possible with the direct State's support. In the long-term perspective this however proved to be wrong and the organizational forms later appeared in the USA became more effective than in the Weimar Republic and in the USSR, but liberal forms of scientific organization took more time for their maturation (pp. 372-373).

The fourth, concluding chapter, 'Biology between communism, national socialism and liberalism' deals with the period between 1929 and 1945. In this period preceding the WWII the international scientific community became ultimately disintegrated. The USSR was the first country, which took the road of scientific autarchy (p. 376). The 'cultural revolution' at the end of 1920s – early 1930s radically decreased scientific contacts of Russian scientists and to 1937 the cooperation almost completely ceased. Beginning with 1933 the similar processes took place in Germany, where the majority of biologists supported Hitler and national- socialism. In both countries there were the attempts to build a peculiar German or Soviet biology with a specific methodology, worldview and ethics.

Kolchinsky arrives at the conclusion that the development of biology under Stalin and Hitler shows that 'dictatorship does not destroy science', although many scientists were repressed (p. 582). In both countries scientists were unable to actively resist to repressions: 'Scientific community appeared to be unprepared for the for jointly upholding the scientific virtues and corporative interests' (p. 583). In both countries the majority of scientists preferred to adapt and to serve to the ruling regimes, although there were the examples of resistance such as the struggle with the Lysenkoism in the USSR. The regimes, in their turn, made some concessions to scientists to ensure their exploitation, Kolchinsky claims.

In 'Conclusions' to the whole book Kolchinsky somewhat surprisingly declares that 'although part of the German biologists enthusiastically accepted Hitler's accession to power, there was no radical changes in their research themes. In general, biology developed in the same directions as in other countries' and the same is true for the Russian scientists, which 'in the majority of cases continued their former studies' after the October revolution (p. 587). Some pages later Kolchinsky, however, concludes that in the Nazi Germany 'all levels of scientific knowledge, praxis of its gaining, methods and objects of investigations, forms of scientific organizations and even the scientific norms and virtues appeared to be radically changed under the influence of ideology and politics of national socialism' (p. 590.)

There are also the differences between two countries, which can be exemplified by the position of biology in the Soviet Union and Germany and is connected with the fact that the authorities in Germany expected only political loyalty, whereas in the USSR biology became the arena of the struggle between various political groups. Accordingly, several directions of biological studies ceased. The repressions in the USSR were politically unpredictable and more intensive than in Germany, where the regime persecuted only racially or politically 'undesirable elements'. Nevertheless, Kolchinsky insists, biologists in both countries succeeded in preserving international scientific traditions and parts of the national cultural praxis and social networks (p. 594).

The book is actually an interesting reading. It is written in a sharp and partly

provocative style and contains a great deal of historical information based on the primary and secondary sources. At the same time some statements seem to be too provocative. For example, the most recent studies have convingsingly condemonstrated that it was not Haeckel's intention to propagate racial hierarchy or plump anti-Semitism. Kolchinsky overlooks these developments.

The major problem with the book is, however, that the author does not succeeded in consolidating his major theses. It is especially evident in 'Conclusions', where, as we have contrasted above, Kolchinsky permanently contradicts himself. This is not an occasion. Author's major thesis proves that science develops in accord to its own regularities and should be explained proceeding from science itself. At the same time, Kolchinsky convingsingly shows through the whole book how cultural-political environments radically influence the course of scientific development and sometimes penetrate the very hearts of scientific concepts. His descriptions of differences between German and Russian scientific traditions and the processses of strong ideologisation in both countries through the second half of the 19th and first half of the 20th century are hardly compatible with the claim that 'the basics principles and methods of the STE developed simultaneously and on the same way under national-socialism, communism and liberalism' (p. 57). There is no explanations in the text how these two basic claims can be theoretically or historically reconciled.

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