gantic scientific laboratory, because it is constantly driving existing science and technology to their limits, permitting us and the coming generations to successively conceptualize and overcome the limitations of our thinking.

By this means only, can we overcome the finiteness, the imperfection of own own immediate mental activity. A zero-growth economy creates a stupid population, a population of idiots. That is exactly what we are experiencing in Europe and the United States today, where the game-playing society of Norbert Wiener and Von Neumann has taken over. Most of the people do not even notice that they have become stupid.

We overcome our finiteness, our mortality, not by concentrating on our own development per se, but by devoting ourselves to the future generations of individuals whose average creative powers will be greater than our own. Our contribution is measured, ultimately, in terms of changes in the rates of increase of the potential density and per capita power of such individuals, per capita and per square kilometer.

So, by Mendeleyev's contribution of a more powerful higher hypothesis, he effectively extends his own creative activity to include—in advance!—that of future generations of discoverers, of entire societies in the future. By participating in that kind of process, you and I become, through the creative activity of those future generations, in a sense infinite beings. Each and every person, in the past, present and future, is an expansion of our powers to know the universe, is a contribution to our potential immortality.

Contrary to the ridiculous assumptions of free-market ideology and Von Neumann's game theory, the ultimate cause of *demand* in a healthy society is the *cultural impulse* to realize to the fullest the creative potential of each member of society, today and for the future. Such a society invests its surplus in order to maximize the *sustained* rate of scientific and technological progress, in accordance with LaRouche's constraints. The process of projecting priority areas for investment and research in such an economy, is very much analogous to what Mendeleyev did with his periodic system. The next higher accessible rate of rate of increase of potential population density defines, relative to the constraints, sets of harmonic values in terms of which we can define crucial areas of scientific and technological development and new qualities of labor power to be brought into existence. We steer the pattern of demand, against the irrationality of so-called market forces, by setting corresponding investment priorities for the state and private banking sectors.

So, we have at the very basis of economy, a very extraordinary concept, as we would say in Germany, an *unheimlich* sort of conception: an unlimited, self-generating, self-sustaining development powered by the process of perfection of the human mind, in which each human life enriches the life of every other human being, in a unique and individual way.

The process of *knowing* the universe, and the process of generating the physical basis for human existence at ever higher levels, are one and the same thing. Economy is epistemology!

Mendeleyev's role in developing Russia

by Victor V. Petrenko

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In the annals of science, the name of Dmitri Mendeleyev (1834-1907) stands alongside those of Leibniz, Gauss, Newton, Lavoisier, Faraday, Riemann, Liebig, Planck, and Einstein. Mendeleyev's discovery of the Periodic Law (1869-70) became a turning point in the systematization of chemical facts and the development of chemical science.

To comprehend what Mendeleyev accomplished, let us imagine a certain strict geometrical pattern made up of small mosaics (this would be the Periodic Table, showing the relations of the chemical elements); we then remove approximately 30% of the pieces at random and hide them (these would be the elements unknown in Mendeleyev's day); and finally we scramble up all the remaining pieces (this represents the absence of any valid system accounting for all empirical facts which were then known) and change the color of some of them (some of the "facts" were erroneous). The task is to hypothesize the original pattern on the basis of the pieces (facts) available.

What allowed Mendeleyev to discover this objective regularity was the hypothesis of the higher hypothesis. He was not afraid to assert that some of the known values for elements' atomic weights were erroneous, and proposed new, true figures. Before his discovery, chemists were "blind" in their research activity. Most experiments were chosen at random or by intuition. But with the development of the Periodic Law, Mendeleyev was able to forecast the existence of three hitherto unknown elements, as well as their properties, the properties of their compounds, and the minerals where these elements could be found. When the French chemist Lecoq de Boisbaudran in 1875 discovered one of the elements, gallium, and defined its physical properties, Mendeleyev sent him a letter pointing out an error in the values obtained and asking de Boisbaudran to repeat the measurements. After new experiments, the correctness of Mendeleyev's figures was proven. Mendeleyev's name is now on the Periodic Table forever: Chemical element number 101 bears his name.

The development of industry

Mendeleyev was not merely a scientist. According to the precise description of the Russian chemist Chugayev,

"Mendeleyev was able to be a philosopher in chemistry, physics . . . and a naturalist in the fields of philosophy, political economy, and sociology." He could be regarded as one of the last encyclopedists, with his interest in physics, chemistry, meteorology, metrology, shipbuilding, aerostatics, agriculture, the oil, chemical, and metallurgical industries, economics, enlightenment, philosophy, and sociology. The amount he accomplished in these areas approaches that of the universal geniuses of the Renaissance. We will touch upon the issues of Mendeleyev's public activity only, leaving aside his scientific work.

From the very beginning of his career, Mendeleyev was involved in industrial projects and research. Most of his efforts were devoted to new branches of young Russian industry, such as oil extraction and refining. (His well-known dictum was: "To heat a furnace with oil is like doing it with banknotes.") He pushed for the construction of a Transcaucasian oil pipeline from Baku to Batum, and sent memoranda to governmental commissions on the development of the oil industry. In the 1880s, he performed an inspection of the Donetsk region and prepared a report on the industrial development of the area, including railways and a canal transport system for coal. Mendeleyev thought that the wealth of the nations is defined primarily by the level of industrial development, and one of the quantitative indicators of this level is the rate of fuel consumption.

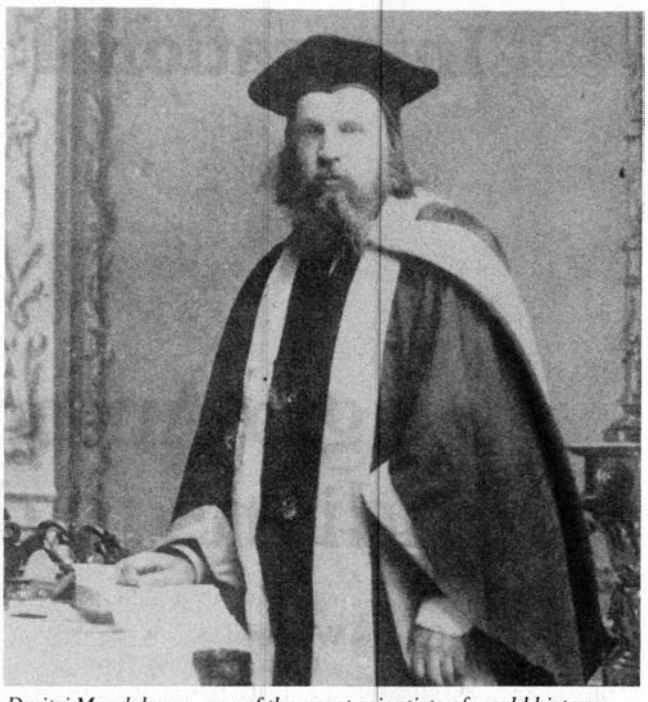
He wrote several articles on young Russian industry, and Mendeleyev's merits in this field were so well recognized in Russia that he was invited to prepare the main report at the first meeting of the Trade and Industrial Unit organized by the Society for Assistance for Russian Industry and Trade, as the leading expert on chemical, oil, and metallurgical plants.

The main pillars of Mendeleyev's ideas were as follows: The industrialization of Russia is a historical necessity; and some peculiarities of the economic and geographic situation in Russia (its undeveloped natural resources, seasonal labor, extensive domestic market, distant harbors and ports, and large Asian market) make for very favorable conditions for the development of national industry.

Protecting domestic production

Alongside his argument for industrialization, Mendeleyev gave advice on general issues of national economic policy. Due to weak private initiative, he said, the management of industrial development should be implemented by the state. The system of trade taxes should not be the only measure for backing up young industry, but should rather be flexible and should not create advantages for large producers to the detriment of smaller ones.

Mendeleyev supported the idea of small enterprises working with local resources. This could help to avoid economic errors based on inexperience, and could also reduce transport charges.



Dmitri Mendeleyev, one of the great scientists of world history. His development of the Periodic Table was an element in an economic Grand Design.

In 1890, Mendeleyev, on the invitation of Count Sergei Witte, participated in the Commission on the Issue of Customs Tariffs. He thought that in order to stimulate Russian industry and defend it from foreign competitors, high import tariffs should be introduced. Unfortunately, the works of the commission were not published in full, and this is one of the reasons why he published his own book on tariffs.

Mendeleyev's book covered various issues of Russian economic policy, and was really a textbook on Russian industry. In it, he criticized the policy of free trade: "This is the school of past 'economists' who come to the solution of vital problems from factional observations and abstract, aloof assumptions." To this he counterposed the protectionist policy, in which the state strongly interferes in the process of foreign trade.

In 1896, Mendeleyev applied to Witte for introduction of a new ruble supported by gold, instead of the old one which had existed since the Crimean War of 1854. The currency reform was implemented the very same year.

As a genuine Russian patriot, Mendeleyev was often on the opposite side of the official guidelines, especially on the question of student freedom and rights. This was why he was not elected a member of the Petersburg Academy in 1880. In 1884, the new, more rigid University Statute was adopted, replacing the much more liberal one of 1863. And in 1890, Mendeleyev decided to leave Moscow University.

A member of dozens of foreign academies and scientific societies, Mendeleyev was truly one of the giants of international science.