

**Oleksandr Ianata, “Perspectives for the Development of Natural Science in Ukraine and the Tasks of the Department of Natural Sciences of the Ukrainian Scientific Society,”**  
*Вісник природознавства [Herald of natural science] no. 1 (Kyiv, 1921): 7-13.*

The history of the origins and development of the human being and humankind, and in particular the history of human culture and the development of society, are for the natural scientist (naturalist) only the final manifestations of the development of organic nature on earth, of a development that is ruled by powerful and unwavering biological laws.

In the harsh struggle for existence humans were deprived of physical abilities to prevail. However, by perfecting their minds, humans managed to force the powers of nature to serve them: to use nature’s boundless resources and to fight its hostile phenomena. The history of human culture, especially in the last few centuries, clearly illustrates how humans are ever more mastering nature. However, it also clearly shows that this process does not go at the same pace as human development. The intensive development of a culture is often followed by a long decline. This often happens as a result of great historical catastrophes, manifestations of definite stages of the internal struggles within human society. The reasons for this are straightforward. Humans who are not dispersed, but organized into human society, are the bearers of culture, which is a powerful force that masters nature. And when human society, regardless of its form of organization, directs that organization not at the acquisition of material values [wealth?], i.e. not at the struggle for existence with nature, but at internal struggle for the distribution of those very values, then its organization in general decreases. And a society disorganized by internal struggle is unable to successfully carry on the struggle with nature. The development of material as well as spiritual [intellectual] culture is then held up, and it declines. The process of the progressive mastery of nature ceases, and even the opposite process of nature’s emancipation from the organized influence of human society occurs.

Thus, following the winding road in the process of its development, humankind simultaneously moves steadily in its progress to ever-higher levels of culture, i.e. mastering nature ever more broadly and deeply. This progress of culture creates the basis for the evolution of the organization of human society, which moves along the same winding roads, but it leads to higher levels of social organization.

The immense contemporary internal struggle in human society, whether it goes on for the last six years under the slogan “war of the peoples” [nations; *Völkerkampf*], or under the slogan “class war,” has deprived humanity of millions of working hands, destroyed huge material values, forced millions of people to waste their work unproductively, exhausted natural resources, and most importantly, demolished the organization of society in general, reduced its capacity for organized struggle with nature. All these typical consequences of the huge historical catastrophes mentioned above are threatening not only for countries like Ukraine and all of Eastern Europe which are already in a state of economic ruin, but for all of Europe and in part for other countries of the Old and New World.

Therefore developing the social organization of humanity in the framework of the general human economy is becoming the most important, and ever more acute, problem of modernity. And this problem further becomes a general human problem, since the aforementioned threat is spreading to the new countries, even to those situated far from the centers of the heated internal social struggle. This is because they are connected to its general

governance, which with the intense development of culture has become to a large extent universal [“all-human”].

Since this is a fundamental issue, we are well aware of the example of Ukraine, that its lot in recent years has fallen to becoming a crater of the enormous human volcano. Because of this the national economy has been destroyed and therefore this issue is here becoming the most acute. Each government passing in front of our eyes is rightfully addressing primarily the problem of the national economy of Ukraine. Thus each government sees solving this problem as the basic precondition for its further state building, but failing at solving it leaves behind even vaster ruin. This ruin will keep spreading until the warring social groups (*verstvy*) lay down the banner of internal struggle... The second condition for stopping the ruin of the national economy and for its progressive development is the intense organized work of all of the social groups that have to establish certain norms of cooperation, at least temporary ones, before the common enemy, nature; that have to put the struggle to master it first on the agenda. Without mastering nature, at least to the extent permitted by modern culture, and moreover having exhausted and destroyed the material values gained earlier, there is no point in furthering the banner of internal struggle, especially since “the distribution of material values” is written on it, and soon enough there will be nothing left to distribute.

In this organized struggle of humanity with nature, no small effort must be made by that part of society which is to a certain extent connected to the culture and the complex of sciences which fall under the term natural science [*pryrodoznavstvo*]. Interpreting the struggle as broadly as possible here, only natural science can bring to it the necessary expediency and systematicity, proceeding of course not only from contemporary needs and requirements, but also from perspectives on the future.

The highest demands are placed on the natural sciences in those countries where the national economy is in a state of destruction and where, at the same time, there are more natural resources that have not yet been exhausted. Ukraine is exactly such a country. So it is only natural that already in 1918 during the First Council of Naturalists of Ukraine the current tasks of natural sciences in general and in Ukraine in particular were discussed as fundamental issues in the context of the revival of the national economy. This was formulated in the following decrees of the Council:

“In the present hour of cultural decline and economic ruin natural science is a powerful force for cultural revival and elevation of the welfare of the population”<sup>1</sup>

“Natural sciences of Ukraine have to help its cultural and economic revival by exploiting its natural resources to the fullest.”<sup>2</sup>

“...only the wide development of natural sciences in Ukraine can provide for the full use of natural resources and the development of material culture.”<sup>3</sup>

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<sup>1</sup> Resolutions on the Report of Academician and Professor V. Vernadsky, “The unification and organization of natural scientists in Ukraine. Minutes and resolutions of the previous Council of Naturalists of Ukraine from August 6, 1918, p. 8. Kiev, 1918.

<sup>2</sup> Ibid, p. 8

<sup>3</sup> From the resolutions on the report of O. Ianata, “Restoring the natural forces of Ukraine to the exploration of its territory. Minutes and resolutions.... p. 12.

If these resolutions were already important two years ago, these days they are especially crucial since the ruin of the national economy has reached a catastrophic state. Implementing these resolutions is not merely a moral duty which the representatives of Ukrainian natural sciences must recognize, but it is a categorical demand of life itself. Life puts the demands in front of the natural sciences primarily in those areas which are directly connected to the fight against nature's hostile phenomena or to the use of its resources, areas which rely on the achievements in natural sciences like agriculture and agricultural industry in its widest sense, like mining, etc. But also, these are the demands to the development of the natural sciences in Ukraine in general; since the applied sciences are based on the fundamental sciences and without the development of the latter, the former cannot improve normally either.

Such is the direction in the development of the modern natural sciences in Ukraine, stimulated by the challenges of life itself, and corresponding to the basic postulates, adopted at the first Council of the Natural Scientists. Generally, the postulates can be framed as follows:

“For its normal development, science has to be national, meaning relying on the broader population and issuing from its interests”.<sup>4</sup>

“The main motto of science has to be, for the good of the people, for the understanding of the entire population.”<sup>5</sup>

By posing the broader tasks of the natural sciences in Ukraine, we must emphasize even more strongly the contrast between the objectives of natural science and its current state in Ukraine.

It is a widely known fact that the level of research into the nature of Ukraine, which ought to be the basis for the natural sciences, is very low. For this situation, we have to “thank” the natural sciences orientation which once existed in Russia and lacked any principles of territoriality. For this reason, some distant regions like Asia were researched, while Ukraine and Great Russia itself remained unexplored. The areas of the applied natural sciences connected to the territory of Ukraine remain undeveloped. The fundamental sciences connected to the territory of Ukraine are also poorly developed.

The aforementioned contrast demonstrates how much work life demands from the natural sciences in Ukraine in all of its fields. And this work is on the agenda; otherwise, the process of Ukraine's economic revival from ruin will be interrupted.

By saying that the work has to be done, however, we should not forget the real conditions on which it depends. Above all, we should consider the lack of natural scientific forces in Ukraine. By various means, especially those outlined at the first Council of Ukrainian Naturalists<sup>6</sup>, we must attend to filling out the ranks of the forces of the natural science and to the systematic training of new workers in this wide field.

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<sup>4</sup> From the Resolutions on the report of prof. V. Taliyev: Objectives of Natural Science in young Ukraine. - Minutes. and Resolutions ..., p. 9

<sup>5</sup> Ibid, p. 9

<sup>6</sup> See the Resolutions on the different reports, especially the report by O. Ianata: The return of Ukraine's natural resources to the study of its territory. Minutes and Resolutions.... , p. 10-12.

Regarding the lack of scientific forces, one cannot avoid the question of those national forms in which scientific and cultural creativity in Ukraine is becoming more and more evident. For us as natural scientists the normality of the powerful elemental process of Ukrainian national revival, triumphantly taking place before our eyes, has to be clear. Among our tasks we must therefore also bear in mind the comprehensive facilitation of the process of creating those national forms in all fields of science, especially the establishment of specialized Ukrainian scientific terminology and nomenclature. Its current state, which does not satisfy us, but is quite natural, greatly slows down the scientific and popular, and especially literary, natural science production in the Ukrainian language.

From all of the above one may conclude that the broadest prospects for development are now open to the natural sciences of Ukraine.

And our task, in anticipation of the heyday of natural science, is to find out in advance the ways which natural science could utilize the scientific forces in Ukraine so that they would yield the greatest practical and theoretical results in the shortest time.

This issue was also addressed at the First Council of Ukrainian Naturalists, and it has already outlined broadly in similar fashion the ways to pursue it – that is above all the organization of the natural forces of Ukraine.

“In order to grasp the current objectives of the natural sciences in Ukraine best, the forces of individual natural scientists and natural science institutions of Ukraine must be as organized as possible, and for this, the formation of the All-Ukrainian Association of Natural Scientists and the All-Ukrainian Union of Natural Scientific Institutions is a matter of urgency.”<sup>7</sup>

“To coordinate and increase the activity of scientific and educational institutions working in the field of natural science, it is advisable to create local departments of the General Association of Naturalists of Ukraine”.<sup>8</sup>

Thus the Council formulated the next tasks related to the organization of natural forces of Ukraine. But it did not limit itself to merely declaring them. The Organizing Committee of the Congress was given appropriate practical instructions. In addition, several real measures have been outlined to bring greater organization into the current scientific work in Ukraine, to increase its natural scientific forces, etc.

It was planned that the aforementioned actions would have been finished by the beginning of 1919, before the planned First Congress of Ukrainian Naturalists.<sup>9</sup>

Political events between 1918 and 1919 forced the Organizing Committee to postpone the Congress. Due to the course of further life in Ukraine, it has not yet been convened.

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<sup>7</sup> From the Resolutions on the aforementioned report of V. Vernadsky. Minutes and Resolutions... p. 9.

<sup>8</sup> From the Resolutions on the report of prof-doc. B. Lichkov: Elaboration of Measures to Raise the Natural Science in Ukraine. Minutes and Resolutions...p. 9.

<sup>9</sup> This congress was actually called on August 3-6, but few members gathered due to the general conditions at the time; because of that, instead of the congress, a preliminary meeting of its members took place, with 72 people attending.

However, during all this time in Kyiv, as well as throughout Ukraine, a vigorous process of development and strengthening of Ukrainian culture continued, clearly revealing the power of the revival of the nation, which for centuries was deprived of the opportunity to freely reveal its natural scientific abilities.

This process was accompanied by the organic development of the Ukrainian Scientific Society as an independent civic and scientific center. The life of the Society began to develop particularly intensely during the political reaction in the second half of last year, when the state scientific centers of Ukraine formed during the revolution – the Ukrainian Academy of Sciences, the Agricultural Scientific Committee of Ukraine and the Ukrainian Geological Committee – were almost destroyed and only barely survived.

The most active scientific [scholarly] and scientific-organizational work of the Ukrainian Scientific Society has developed in the field of the natural sciences. The Natural Scientific Section of the Society, which began its work actively from the spring of 1918, greatly expanded its activity during 1919 and divided into several active subsections: Botanical, Geophysical (with anthropology and ethnography)<sup>10</sup>, Geological and Zoological. In addition, new sections have been established and are operating along with the Natural Science Section, which is related to them: Agronomical and Geographical. The Medical Section, which previously existed together with Natural Sciences, also developed its activity. The Technical Section, which separated from Natural Science in the spring of 1918, has also grown significantly.

In connection with the expansion within the Ukrainian Scientific Society of the scientific organization which covered almost all the fields of the theoretical (pure) and applied natural sciences, and which already extended beyond the boundaries of the Natural Scientific Section (whose broad name does not correspond to its limited essence, but at the same time is a complex organism), the idea arose to transform the aforementioned subsections of the Natural Scientific Section into separate sections. However, it was decided to unite all the sections of the Society related to the natural sciences into the separate Department of Natural Sciences of the Ukrainian Scientific Society. The Council of the Natural Science Section of the Scientific Society embarked on implementing the changes. Apart from that, the Council also considered the creation of the hitherto missing sections, without which the Department would not cover their full complexity. As a result of the implemented actions the Mathematical and Chemical Sections were organized, and the Physics section is in the process of organization. Thus the Department of Natural Sciences will consist of the following sections: Agronomic, Botanical, Geographical (with anthropology and ethnography), Geological, Geophysical, Zoological, Mathematical, Medical, Technical, Physical and Chemical Sections.

Each Section, which is part of the Department of Natural Sciences, will represent an independent association of workers of a certain field of natural sciences. And the Department will represent a general association, uniting all of the workers of natural sciences and their special associations.

While uniting all the Sections of the Ukrainian Scientific Society related to the natural sciences, the Department, however, is not going to limit their activities. The activities of each section will derive from the sections' specific objectives. But at the same time, the Department will coordinate the activities of certain ones, especially the Sections most closely related to it, organizing joint meetings, reports, commissions, institutes, whatever extends

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<sup>10</sup> Anthropology and Ethnography were included in the Geography section. —V.O., T., Shch.

beyond the competence of an individual section and will relate to the competence of the two or more Sections. Accordingly, the joint meetings of the two or more Sections have to be convened (along with the Departmental meetings and meetings of the particular sections). The Terminological, Literary and Bibliographic Commission of the Natural Sciences Section should first and foremost become the joint commissions of the Natural Science Department. These commissions were earlier also related to the natural sciences and were subdivided into subcommittees, as per the Sections of the Department. Similarly, the Institute of Microbiology founded by the Natural Science Section should become a joint organization of the Department. Due to the lack of premises, the Section was unable to house the Institute yet with its valuable properties and the library, donated to the Section by Dr. Khv. Omelchenko. So, shortly the organization of the Natural Sciences Department of the Ukrainian Scientific Society headed by the separate Council will be finished. This way, the goal of the organization of the natural forces of Ukraine, outlined almost two years ago at the First Council of Ukrainian Naturalists will be reached.

Considering the broader life of the Ukrainian Scientific Society over the last year, the analogue process of its organic development is observed in the field of humanities, with the corresponding Sections of the Society uniting into a separate Department of Humanities, with sections: Archaeological, Ethnographic, Economical, Historical, Arts, Legal and Philological. At the same time, the general institutions of the Society, which unite all its sections, namely the Library of the Society and the Museum, with its Departments and special Bureau, are also developing intensively.

Thus, the Ukrainian Scientific Society is firmly transforming into a general scientific association which will unite the workers of all branches of science in Ukraine. It also needs to fulfill the second task – to unite all the other, especially central, scientific institutions of Ukraine, both public and state, the most important among which are the Ukrainian Academy of Sciences, the Agricultural Scientific Committee, and the Ukrainian Geological Committee. It will be up to the Ukrainian Scientific Society to do this, because only an independent public scientific center of Ukraine like the Ukrainian Scientific Society will be able to fulfill it properly.

The important role that the Ukrainian Scientific Society plays in the development of science in Ukraine will only be fulfilled when Kyiv is not detached from almost all of Ukraine as it is now, and when Ukraine is covered by a dense network of local branches of the Ukrainian Scientific Society bringing together the local scientific institutions and workers. As envisioned by the Natural Scientific Section in 1918,<sup>11</sup> the establishment of such branches in slightly more favorable conditions will become a product of natural creativity in places where the need is felt.

Speaking about the uniting of all scientists in Ukraine on the basis of the Ukrainian Scientific Society and its local branches, and at the same time around the Department of Natural Sciences of the Society and its sections – all naturalists of Ukraine, we have in mind usually the main task of the Ukrainian Scientific Societies – to create and spread science in Ukraine in national Ukrainian forms. Here we also mean that this must be the responsibility not only

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<sup>11</sup> Riznychenko. On the Activity of Natural Science Section of Ukrainian Scientific Society in Kiev and Prospects of its Further Development // Vist. Pryrod. Sek. U.N.T. Volume 1. Part 1. Page. 4-7. Kyiv, 1918; V. Riznychenko. Activities of the Natural Science Section of the Ukrainian Scientific Society in Kiev // Vist. Pryrod. Sek. U.N.T Vol. 1, Vyp. 2. Pages. 61-64. Kyiv, 1919

of scientists of Ukrainian descent but of all those who are working in Ukraine and are aware of their duty before the Ukrainian people and its natural requirements. And we believe that this principle will be the ground on which the scientific creativity of Ukrainians and non-Ukrainians in Ukraine will bloom. All the practice of life, especially of the last year, strongly testifies to this, because we see many scientists of non-Ukrainian origin working in the Ukrainian Scientific Society, putting all their efforts into giving their work national Ukrainian forms, and not to remain in Ukraine as foreigners. For by historical circumstance they remained foreigners, in a role instilling foreign, unnatural culture in Ukraine. And we are sure that this natural process, by which history now corrects its past tragic mistakes in Ukraine, will soon involve in its powerful creative movement all truly honest workers of science in Ukraine. Thus we are boldly talking about the unification of all its scientific forces.

As a result of this natural and rapid process, the Department of Natural Sciences of the Ukrainian Scientific Society, relying on the analogous departments of the local branches of the Society, should soon fulfill its main task – to become essentially the all-Ukrainian association of natural scientists of Ukraine and the union of natural scientific institutions of Ukraine, whose formation was first proposed two years ago at the First Council of Naturalists of Ukraine.

Achieving this basic objective will be a solid guarantee that the natural scientific work in Ukraine will be organized and planned, which will allow the most expedient use of the few natural scientific forces in Ukraine for the development of its natural sciences and the satisfaction of its vital needs (which is the responsibility of natural science in Ukraine).

Satisfying those needs, natural science will also make its valuable contribution to solving the most difficult issue of modernity in Ukraine – the restoration, reconstruction, and development of its destroyed economy: it will enable the most expedient use of innumerable natural resources of Ukraine and the successful fight with hostile natural phenomena.

Having resolved this issue on the vast terrains of the fertile lands of Ukraine, much would have been done to solve the basic common human problem of modernity, which we briefly cited as strengthening the front of humanity's fight with nature.

And without solving this problem, humanity will not be able to follow the paths to the higher ideal forms of social life, the struggle for which is for the naturalist the most interesting manifestation of the eternal laws of nature's evolution.

The prospects for the development of natural science in Ukraine, which we outlined here, in connection with the tasks of the Natural Sciences Department of the Ukrainian Scientific Society, assure us that the natural science of Ukraine and its members are honored to fulfill their responsibilities to Ukraine, and thus to humanity.

Kyiv, October 10, 1920

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