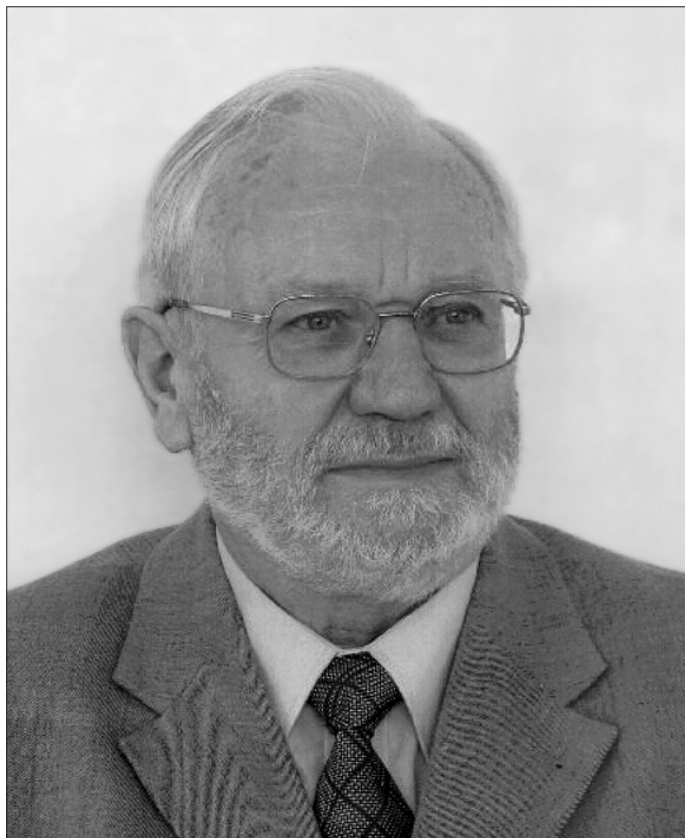


**1 Prof. RNDr. MILAN RUŽIČKA, DrSc.
- FOUNDER OF LANDSCAPE-ECOLOGICAL PLANNING
IN THE SLOVAKIA**



Professor M. Ružička as a distinguished personality and scientist pioneered the idea of study and promotion of the environment in its wider natural and socio-economic relations and simultaneously was the founder of a new interdisciplinary landscape-biological and landscape ecological research in Slovakia. He elaborated theoretical-methodological basis of landscape biology and later of landscape ecology and especially its applied expression by biological landscape planning and subsequently landscape-ecological planning.

By study of biology and geography and later specialising in geobotany professor M. Ružička obtained an excellent basis of his later scientific career. Phytocenological mapping of numerous territories of Slovakia, which were concluded by reconstruction geobotanic map of Slovakia helped him to open the doors into the integrated landscape studies and to widen his horizon limited to biology by a new comprehensive view of landscape.

The natural and logical result of combined Ružička's studies was the introduction of until then in Slovakia more or less unknown concept of biology of landscape as the first step to the later adopted term of landscape ecology. And then it was not far to, taking into

consideration Ružička's well-developed sense for the applied scientific research in creation and conservation of landscape, developing of even broader conception of the notion of creation and conservation of the environment.

The logical reflection of combination of the knowledge and mental assets of prof. Ružička was his extensive publication activity in the framework of the basic and applied landscape-biological or landscape-ecological research. Here should like to point at his most important works connected with landscape research and its structure from the biological-ecological point of view, and its application in practical life by elaboration of the theoretical basis and methodological instruments of landscape-ecological planning.

The efforts of defining and classifying landscape biology and landscape research as a whole from the biological point of view are expressed in the works "Landschaft als Gegenstand der biologischen Forschung - Landscape as Object of Biological Research" (Ružička 1965a) and "Probleme der Landschaftsbiologie in der Slowakischen Akademie der Wissenschaften – Problems of landscape biology in the Slovak Academy of Sciences" (Ružička 1965b).

It is interesting that for the proper landscape-biological and later landscape-ecological research professor Ružička chose out of the functional, process-oriented or structural approach precisely the last mentioned as it represents the external synthesis of the action of the two preceding internal approaches, which, besides other, corresponds to his integrated thinking. He departed from the assumption that the key issue of the landscape-ecological study of landscape is the structure and especially biological and ecological value of landscape expressed by physiognomic-formative types of vegetation as its sensitive indicator.

Classification of the individual landscape elements in the framework of the secondary landscape structure, subsequent alignment of their individual territorial transects, and within them the corresponding key areas, is one of the main outputs of structurally oriented basic landscape-ecological research. This knowledge was published for instance in the works "Übersicht und Begrenzung der Landschaftskomponenten, Faktoren, Elemente und der Landschaftsstruktur" (Ružička, Drdoš, J., 1970), "Druhotná štruktúra krajiny ako kritérium biologickej rovnováhy - Secondary Structure of Landscape as a Criterion of Biological Balance" (Ružička, M., Ružičková, H., 1973) and "Ecological system analysis of biota and landscape structure" (Ružička 1995a).

The author of the above mentioned studies of the basic landscape-biological research did not only publish them, he also tried to apply them in the landscape-biological research.

He knew that mere description of the present state does not solve the ever more manifest problems of environmental and ecological nature which accumulated as a negative phenomenon accompanying industrialization and urbanization of Slovakia.

This precisely was the moment when prof. Ružička fully applied his capacity to anticipate future and to respond adequately to complicated situations. He realized that the solution of complex ecological and environmental problems requires preparation of the theoretical basis and methodological instruments. One of the possible tools was biological, later, landscape ecological planning. But there was no experience with its application in Slovakia. Prompt solution of the problems were possible only if a team of experts from the various geodisciplines and humanities was formed. It was expected that such a team would be able to prepare a particular biological or landscape-ecological plan.

Gradually when numerous biological landscape plans with different themes and linked to different territories were prepared, experience and knowledge was obtained. It was transformed step by step into a more coherent methodology, which culminated later at the turn of the 1970` and 1980`s. Foundations of the new, almost revolutionary landscape-ecological planning method LANDEP were laid and the main protagonists were professor M. Ružička and his closest collaborator professor L. Miklós. The main asset of the LANDEP methodology as a result of a year -long continuity and accumulation of theoretical, methodological and practical knowledges by a wider interdisciplinary team of scientist is its system openness, application universality, information expressiveness and direct applicability. These advantages are the results of its inner five-step structure and a close bilateral linkage between text and maps of the LANDEP methodology from analysis through synthesis, interpretation, evaluation up to the proposal of an ecologically land use optimization. The results of this monograph indicate, that the selected landscape-ecological methodology was not only contribution for land use optimization, but for the solution of environmental problems too.

On the basis of succesful presentation of particular landscape-ecological plans elaborated by this methodology at various international scientific events, its tests in several European and world countries such as: Austria, Bulgaria, Denmark, Finland, Germany, Mexico, Nepal, Vietnam and other, publication of the result at home and abroad of works such as "Methodology of Ecological Landscape Evaluation for Optimal Development of Territory" (Ružička, Miklós, 1981), "Landscape-ecological planning (LANDEP) in the process of territorial planning" (Ružička, Miklós 1982a) "Example of the simplified method of landscape-ecological planning LANDEP of the settlement formation" (Ružička, Miklós, (1982b), "Landscape-Ecological Planning (LANDEP) in the Process of Territorial planning" (Ružička, Miklós, 1984) and "Basic Premises and Methods in Landscape-Ecological Planning and Optimisation" (Ružička, Miklós, (1990) and "The principles and criteria of landscape ecological method LANDEP" (Ružička, 2000) this method was gradually also accepted by foreign experts. At present time the landscape-ecological planning Method LANDEP is most important landscape-ecological theoretical-methodological instrument to solve the sustainable development of the Slovakia from ecological and environmental point of view.

Selected landscape-biological and landscape-ecological bibliography of Prof. Ružička

- RUŽIČKA, M. (1965a): Landschaft als Gegenstand der biologischen Forschung. Quaestiones Geobiologicae, 1, (Biologické práce, 11, 10), p. 29-39.
- RUŽIČKA, M. (1965b): Probleme der Landschaftsbiologie in der Slowakischen Akademie der Wissenschaften. In: Archiv für Naturschutz und Landschaftsforschung, 5, 4, p. 213- 215, Berlin.
- RUŽIČKA, M. (1967a): Die Stellung der Landschaftsbiologie in der Biologie und Geographie. Wissenschaftliche Abhandlungen der Geogr. Gesellschaft der DDR. Bd. 5, p. 241-250.
- RUŽIČKA, M. (1967b): Der Beitrag der Landschaftsbiologie zur Neuordnung des ländlichen mes. Natur und Landschaft, 42, p. 153-156.
- RUŽIČKA, M. (1969): Stadt und Landschaftsstruktur. In Vitalstoffe und Zivilisationskrankheit. Internat. Journal, Hannover, 5, p. 210-211.
- RUŽIČKA, M., DRDOŠ, J. (1970): Übersicht und Begrenzung der Landschaftskomponenten, Faktoren, Elemente und der Landschaftsstruktur. Problémy biológie krajiny, 7, p. 101-110.
- RUŽIČKA, M., RUŽIČKOVÁ, H. (1973): Druhotná štruktúra krajiny ako kritérium biologickej rovnováhy. Quaestiones geobiologicae, 12, p. 23-61.
- RUŽIČKA, M., DRDOŠ, J. (1973): Landschaftsökologie in der Planungs- und Projektierungspraxis. Quaestiones geobiologicae, 11, p. 195-211.
- RUŽIČKOVÁ, H., RUŽIČKA, M. (1973): Štúdium druhotnej krajinej štruktúry na príklade modelového územia. Quaestiones geobiologicae, 12, p. 5-22.
- RUŽIČKA, M., RUŽIČKOVÁ, H., ŽIGRAI, F. (1975): "Teoretické a metodické základy biologického plánovania v krajine. ÚBE SAV Bratislava, 150 pp.
- RUŽIČKA, M., RUŽIČKOVÁ, H., ŽIGRAI, F. (1978): Krajinné zložky, prvky a štruktúra v biologickom plánovaní krajiny. Quaestiones geobiologicae, 23, 77 pp.
- RUŽIČKA, M., MIKLÓS, L. (1981): Methodology of ecological landscape evaluation for optimal development of territory. In: Proc. I. Int. Congress Meth. Soc. Landsc. Ecol. "Perspectives in Landscape Ecology". Veldhoven, Wageningen, p. 99-107.
- RUŽIČKA, M., MIKLÓS, L. (1982a): Landscape-ecological planning (LANDEP) in the process of territorial planning. Ekológia (ČSSR), 1, 3, p. 297-312.
- RUŽIČKA, M., MIKLÓS, L. (1982b): Example of the simplified method of landscape-ecological planning (LANDEP) of the settlement formation. Ekológia (ČSSR), 1, 3, p. 395-424.
- RUŽIČKA, M. (1983): International cooperation in ecological landscape research. Ekológia (ČSSR), 2, 2, p. 211-212.
- RUŽIČKA, M., MIKLÓS, L. (1984): Methodology of synthesis in landscape ecological planning (LANDEP). Proc. of First Int. Sem. of IALE, 15.-19.10.1984, Roskilde, Supplement Vol. 5, p. 163-174.
- RUŽIČKA, M. (1986a): Topical problems of landscape ecological research and planning. Ekológia (ČSSR), 5, 3, p. 233-238.
- RUŽIČKA, M. (1986b): International cooperation in landscape ecological research. Ekológia (ČSSR), 5, 3, p. 332-333.
- RUŽIČKA, M. (1986c): International cooperation in landscape ecological research. IALE Bulletin, 4, 2, p. 8-10.

- RUŽIČKA, M. (1988): Basic premises in landscape ecological planning. In: Proc. of Bilateral Workshop Agricultural Development and Environmental Research: American and Czechoslovak Perspectives. Washington, p. 30-38.
- RUŽIČKA, M., MIKLÓS, L. (1990): Basic premises and methods in landscape ecological planning and optimization. In: Zonneveld, I. S., Forman, R.T.T., 1990: Changing Landscapes: An ecological perspective. Springer-Verlag, New York, p. 233-260.
- RUŽIČKA, M. (1993): Environmental planning and management. Acta Envir. Univ. Com., 1, p. 63-66.
- RUŽIČKA, M. (1994a): Ecological system analysis of landscape structure and its dynamics. EUROMAB Comparisons of landscape pattern dynamics in European rural areas. Symposium, October, 1993, Germany, Leipzig-Hale, Vol., 3, p. 144-147.
- RUŽIČKA, M. (1994b): Further development of landscape ecological research. Proc. of the First Int. Conf. Ecology and Democracy. České Budějovice, p. 74-77.
- RUŽIČKA, M. (1995a): Ecological system analysis of biota and landscape structure. Ekológia (Bratislava), Supplement 1/1995, p. 15-21.
- RUŽIČKA, M. (1995b): The relationship between carrying capacity and ecological stability of the landscape. Acta Envir. Univ. Com. (Bratislava), 4-5, p. 55-60.
- RUŽIČKA, M. (1995c): Landscape ecology in Slovak ecological science. Ekológia (Bratislava), Supplement 1/1995, p. 227-232.
- RUŽIČKA, M. (1996a): Sustainability of water resources and ecosystems. Proc. of the workshop Sustainability of Ecosystems: Ecological and Economic Factors. RNAAs, Amsterdam, p. 137-139.
- RUŽIČKA, M. (1996b): Development trends in landscape ecology. Ekológia (Bratislava), 15, 4, p. 361-367.
- RUŽIČKA, M. (1998a): Contribution of Slovak landscape ecology for IALE arise. Ekológia (Bratislava), 17, Supplement 1/1998, p. 8-13.
- RUŽIČKA, M. (1998b): Specialist education for environmental ecology. Ekológia (Bratislava), 17, Supplement 1/1998, p. 290-292.
- RUŽIČKA, M. (2000a): Krajinná ekologickej plánovanie – LANDEP I. (Systémový prístup v krajinskej ekológii), Edícia Biosféra, A, Série vedeckej literatúry. Združenie Biosféra, Vol. 2, ISBN 80-968030-2-6, 118 pp. Nitra.
- RUŽIČKA, M. (2000b): The principles and criteria of landscape ecological method LANDEP. Ekológia (Bratislava), 19, Supplement 2/2000, p. 18-22.
- RUŽIČKA, M. (2001): System approach to landculture (Agriculture, Gardening, Forestry). Ekológia (Bratislava), 2001, Vol. 20, Supplement 3, 5-10.
- RUŽIČKA, M. (2002): Systémová ekológia. Edícia BIOSFÉRA (Bratislava), C. Série učebných textov, Vol. 1, 64 pp.
- RUŽIČKA, M. (2003): Share the Slovak Ecology on landscape ecology development and IALE arise. Ekológia (Bratislava), Supplement, 2/2003.
- RUŽIČKA, M. (2005): The history of landscape ecology in Central Europe. In: Alfa Spectra, Central European Journal of Architecture and Planning FA STU, Nr. 2, p. 3-4, Bratislava.
- RUŽIČKA, M., MIŠOVIČOVÁ, R. (2006): Krajinná ekológia. Edícia BIOSFÉRA (Bratislava), C. Série učebných textov, Vol. 2, 13