

## 120 YEARS JUBILEE OF V.V. DOKUCHAEV SOIL SCIENCE CHAIR

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V.V. Dokuchaev Chair of Soil Science at Kharkiv National Agrarian University was established on January 5, 1894 in Novo-Alexandria (now the Puławy town in Poland) Institute for Agriculture and Arboriculture, after initiative and under direct guidance of this prominent scholar the founder of Soil Science.

**Novo-Alexandria Institute for  
Agriculture and Forestry  
(now the Puławy town in Poland)**



**V.V. Dokuchaev (1846-1903)**

This was the first ever Chair of Soil Science not only in Imperial Russia (whosubordinateswere Ukraine and Poland), but also in the whole world. Viewing up the 120-year history of the Dokuchaev Chair, it should be noted that main vector (and the core) of its activities have ever been educational, sciential and exploration activitiesinfelicitousjoint with agricultural industry. At every stage of its elaborate history, the Dokuchaev Chair was a bearer of advanced and,often, absolutely innovativelines of Soil Science evolution.

This tradition was started by V.V. Dokuchaev, the outstanding scientist andscholar, and the founder of Soil Science, with M.M. Sibircev, his talented disciple,comrade,and (in 1894-1899) hisfirstdeputy- Professor.

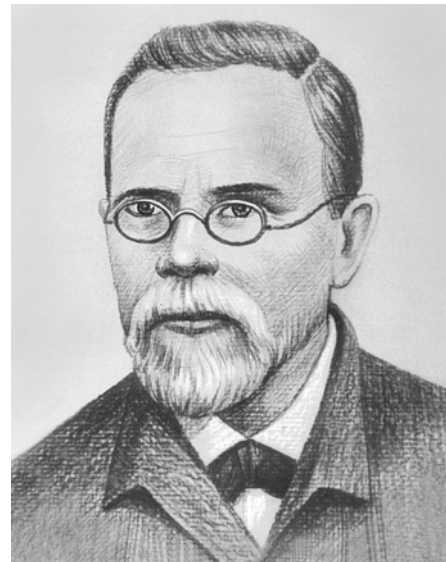
A good memory of M.M. Sibircev (who prematurely died of fatal illness) was left with the first in the world "Dokuchaev - Sibircev Classification" (the genetical principles-based register of soils), «Počvovedenie» (a tutorial Soil Science study-book) and a wide scope of soil-mapping and land- assessmentactivities as well.

The Soil Scienceformation lasted many long years. Its sciential basis was set up on Dokuchaev's genetic andevolution ideas that the soil in itself reflects an independent natural body, a nature- and- history- relevantphenomenonand a natural environmental function (some anthropogenesis postulates werecomplemented by V.V. Dokuchaev followers).This Dokuchaev's "soil-triad" impliesthe soil-formation process evolution, thebroadvariety of world' soils, and their fertility. Theory of soil formation, soils' genetic classification, the "Type of soil" concept, field (morphological)

diagnosis and soil mapping methods, soil cover zoning, soil maps of European part of Russia, lands' bonitet assessment — all these items were first elaborated by V.V. Dokuchaev, being now used by every soil scientist all over the world.

In 1899-1911, The Dokuchaev Chair of Soil Science at Novo-Alexandria Institute of Agriculture and Forestry was headed by Academician K.D. Glinka - the known soil scientist who, since 1894 headed The Chair of Mineralogy and Geology, and from 1899 — both of Chair of Soil Science. He guided the studies for soil genesis and geography, and the progress of soils' classification efforts during Stolypin reforms 1906-1912, including his command of expeditions by Resettlers' Society (covering ~

3 mio km<sup>2</sup> areas of Siberia and Central Asia). Thus collected materials became the basis for subsequent publication (together with Academician I.I. Prasolov) of "Overview Atlas of Soil Maps" of the USSR Asia territories.



**M.M. Sibircev (1860-1900)**



**K.D. Glinka (1867-1927)**

K.D. Glinka issued his "Textbook on Soil" published in six editions, including a version in English. He had developed a new genetic classification of soils of the world, having pioneered in substantiating five major types (i.e., podzolic, boggy, steppe, solonchized and laterite) of soil-formation entailing 25 types of soils. He was the first scientist to draw one's attention (1911) to profile- evolution of some soil- types, through upper horizons' illimerization. Later (in 1956) Philippe Duchaufour named this process "lessivage" (a French analogue of English "leaching").

K. D. Glinka was elected (1927) a Member of the USSR Academy of Sciences (he was the first soviet Soil Science Academician) as well as

the first ever President of the International Soil Scientists' Society of the World; which fact confirmed his high world's prestige of a scientist the follower of V.V. Dokuchaev, and also the then-Soviet Soil Science in general.

After leaving this office by K.D. Glinka in 1911, the Chair was headed by V.P. Smirnov-Loginov (the assistant- Prof., and since 1912, the Adjunct- Prof.), who invited S.M. Muravliansky (a graduate from the University of Warsaw) to be the Chair assistant. V.P. Smirnov-Loginov continued his teaching the course of lectures on Soil Science (started by M.M. Sibircev and K.D. Glinka), and combined his studies in "Mineralogy of Soils" section with exploring the podzolic process of soil formation and with territorial soil surveying (in Altai and Tomsk provinces); whereas S.M. Muravliansky studied problems of solid phase characteristics (i.e., granulometry and physico-mechanical properties) of soils.

With the outbreak of World War I (1914), the Novo-Alexandria Institute of Agriculture and Forestry Institute was evacuated to Kharkiv. Due to Decree of Peoples'



**Kharkiv Institute for Agriculture and Forestry on Mironositskaya street**

V.P. Smirnov-Loginov left the Chair after being elected a Dean of Polytechnical Institute Agriculture Faculty in Tiflis (Georgia) that was later reordered into Chair of Soil Science at Tbilisi Agricultural Institute.

By then, duties of the Soil Science Chair head at Kharkiv Institute of Agriculture and Forestry were entrusted to S. M. Muravliansky who by that time became a Professor.

Since 1924, history of Chair was linked with the name of Academician Olexei N. Sokolows'ky — the famous soil scientist, a prominent organizer of agricultural science and industry, and the first President of the Academy of Agrarian Sciences of Ukraine, Academician of Academy of Agricultural Sciences and Academy of Sciences of Ukrainian SSR, Rector of V. Dokuchaev Kharkiv Agricultural Institute (1944-1959).

He headed the Chair of Soil Science from 1924 to 1959.

However, this phase of the Chair history was preceded by a fortunate idea of developing a Dokuchaev-type genetic Soil Science on terrain of Ukraine, ever since formation of its Ukrainian academic school. This is a specific subject of studies highlighted in scientific works and papers by V. A. Vergunov, G. S. Gryn, A.N. Grinchenko, V.I. Kanivec and D. G. Tykhonenko.

It should be noted that in origin of a strong school of Soil Science in Ukraine, a special role in XIX-XX cc was played by tutorial scientists in: Petrovskaya Agricultural Academy (especially V.R. Williams and D. M. Prianishnikov), St. Petersburg University (K.K. Gedrojc) and Novo-Alexandria Institute of Agriculture and Forestry (headed by Prof. V.V. Dokuchaev) who had organized his 2nd expedition\* (1888-1894) to explore the land territory of Poltava Province in tsarist Russia (the 1st expedition by V.V. Dokuchaev was conducted in Nizhny Novgorod province).

Results of these expeditionary explorations included:

- ✓ survey of lands on this part of Ukrainian territory,
- ✓ implementing a series of land-assessment activities,
- ✓ publishing "The Russian Chernozem" book by V.V. Dokuchaev (1883),
- ✓ origination of a new scientific branch (the Soil Science), and

Commissariat Council of Ukrainian SSR (March 26, 1921), the Institute was renamed to "Kharkiv Institute for Agriculture and Forestry" and quartered in several parts of the city. So, the Soil Science Chair was lodged in an aristocratic downtown mansion (now, 92 Mironositskaya street).

Thus began the Kharkiv stage of the Soil Science Chair history.



**O.N. Sokolows'ky (1884-1959)**

✓foundation of the Soil Science Chair in 1894.

During 1920-ies, the Dokuchaev period of Soil Science evolution (together with M.M. Sibircev, K.D. Glinka et al) on terrains of Ukraine was gradually changing for «Nabokih stage».

O.I. Nabokih (1874-1920) – the founder of deep-profile Soil Science, - graduated from the Novo-Alexandria Institute of Agriculture and Arboriculture, acted as Dokuchaev's disciple and opponent, and worked at Novorossiysky University (Odessa, Ukraine). The nowadays Odessa Agricultural University is the home of the world's only Museum of Soils that displays >4-meter deep monolith samples of soils collected by O.I. Nabokih. He used to conduct expeditionary exploration studies of soils in Ukraine (Kharkiv, Kherson, Podillya and Volyn areas), Russia (Kuban), Moldova, Georgia (Batumi) etc. He explored different soils' evolution and studied soil-classification topicalities, natural-landscape complexes, origination of loesses etc.



**G.G. Mahov (1886-1952)**

The Nabokih Soil Science School was inherited and continued by G.G. Máhov (genesis, diagnosis, classification, mapping, agro-inventory of soils), V.I. Krokos (the founder of paleo-pedology), A.F. Lebedev (soil & earth waters, water-physical characteristics of soils etc.).

Later on since 1920-ies, development of Soil Science in Ukraine was greatly associated with G.G. Mahov (whose detailed curriculum vitae was outlined by Prof. V. A. Vergunov).

During 1920-1927, G.G. Mahov acted as the Head of Soil Science Section of Ukrainian People's Council of Agriculture; in April 1923, he organized the first Congress of Soil Scientists of Ukraine; in October 1923, he participated in the 1st Agricultural Exhibition in Moscow displaying:

various soil samples collected by G.G. Mahov at soil-research stations all over Ukraine; a soil-map of Ukraine plotted in [60 Verst : 1"] (English inch) scale personally by G.G. Mahov, as well as a collection of soils of Ukraine whose artefacts and exhibits were collected by G.G. Mahov and D.G. Vilensky.

This collection of soils was a triumphant presentation also at 1st International Congress of Soil Science in Washington, USA (1924).

In February 1924, G.G. Mahov moved from Kiev to Kharkiv together with the Soil Science Section of Ukraine under his command and, during March-October 1924, he was Acting Head of Chair of Soil Science at Kharkiv Institute of Agriculture named after H. Rakovsky (now the V.V. Dokuchaev Kharkiv Agriculture University). In 1924, O.N. Sokolows'ky (the disciple of Academicians V.R. Williams and D.M. Prianishnikov) was elected as a Research Professor of Soil Science Chair at Kharkiv Institute of Agriculture.

Chair of Soil Science headed by Prof. G.G. Máhov was engaged in educational-methodical activities, whereas Chair led by Prof. A. N. Sokolowski did their science-exploration work. Consequently, both departments were united into one Chair of Soil Science headed by Prof. O.N. Sokolows'ky.

Beside Prof. O.N. Sokolows'ky, the Chair fellows were Prof. S.G. Máhov, D.G. Vilensky (later Professor of M.V. Lomonosov Moscow State University, who in 1956 issued an original tutorial handbook «Počvovedenie» (Soil Science), and E.M. Lavrenko (a

geobotany specialist, later an Academician of the USSR Academy of Sciences).

G.G. Mahov organized several expeditions across the Ukraine resulting in:

- plotting up the Soil Map of Ukraine in [1: 1,000,000] scale,
- writing the "Soils of Ukraine" monograph- handbook (1930) that gave a new inspiration to Dokuchaev's methods of soil study (e.g., (i) use of morphology indications as a way of soils' identification in the wilderness, and (ii) defining a relationship of soil cover with basic elements of physico- geographic preconditions for soil formation (especially with flora factor),
- implementing agro-inventory lands' evaluation activities.

Formation and development of the Chair of Soil Science in mid-1920-ies was closely associated with the name of Academician O.N. Sokolowski, who headed the Chair for nearly 35 years. It was under his leadership that a strong academic school of Agro- Soil Science was created, primarily titled «Scientific School of Academician Sokolovs'ky», and then «Kharkiv School of Soil Scientists», «Ukrainian School of Soil Scientists».

Scientific subjects supervised by O.N. Sokolovs'ky encompassed such now-important conceptual issues of Soil Science as:

- theory of freely soluble salts' origin in soils (O.N. Sokolovs'ky, G.S. Gryn', A.F. Yarovenko);
- halogenesis of Ukrainian loesses' soil-depth (G.S. Gryn');
- evolution of eroded soils (S.S. Sobolev);
- studies for active and passive clay and humus;
- colloidal-chemical technology of soils (O.N. Sokolovs'ky, M.K. Krups'ky, N.B. Vernander, M.I. Laktionov, O.Ya. Demidienko);
- adsorptive unsaturation of loesses with  $Ca^{2+}$  (known as Sokolovs'ky Paradox)
- crystal-exchangeable hydrogen (N.V. Dubovs'ka);
- colloidal-chemical studies of soils' humus as a polydispersion system (M.I. Laktionov);
- theory and practice of calculating doses of calcium application in soil due to extra absorption (O.M. Grinchenko);
- genesis and culturization of saline soils on Mid-Dnieper bank (O.M. Grinchenko, O.M. Mozejko) and chestnut complex soils (O.N. Sokolovs'ky, O.M. Mozejko, V.D. Kysil');
- theory of Ukrainian soils' culturization and application of lime and gypsum on chernozems and peat soils (O.M. Grinchenko); S.T. Voznyuk, and I.A. Shelar);
- light application of gypsum (2-4 kg/ha in rows during sowing) (O.M. Grinchenko, V.O. Pelypec');
- cultural (anthropogenic) process of soil formation (O.M. Grinchenko, G.Ya. Chesnyak);
- field diagnostics of soils (G.S. Gryn');
- nomenclature list of Ukrainian soils and their agro-production grouping (G.S. Gryn', N.B. Vernander, O.M. Mozejko, A.F. Yarovenko, V.D. Kysil');
- methodology of large-scale soil surveys and mapping of soils (G.S. Gryn', N.B. Vernander, O.M. Mozejko, V.D. Kysil', A.F. Yarovenko);
- agricultural typology of lands (G.S. Gryn', N.M. Breus, V.M. Tischenko);
- cryogenic theory of loesses' origin and saline accumulations (O.O. Kireev).

In 1956, on base of Soil Science Chair and under guidance of Academician O.N. Sokolovs'ky, a relevant R&D Institute was created and housed in facilities of Soil Science, Agrochemistry and Land Husbandry faculties in 92 Dzerzhinskystreet.

Large-scale survey of soils (1957-1961) under leadership of Academician O.N. Sokolov's'ky was successfully completed, an Atlas of soil maps and handouts of different scale and purpose were compiled.

Exploration of various global soil cover peculiarities was notably intensified by participants of expeditions the disciples of Kharkiv School of Soil Science, e.g.:

- Soil formation on slopes in Ukrainian Forest-Steppe and Steppe (A.O. Georgi),
- Colloidal-chemical features of chernozemshumus, and its transformation under influence of agriculture land use (M.I. Laktionov);
- Evolution of soils on pine wood terraces of Ukrainian Forest-Steppe rivers (D.G. Tykhonenko),
- Meadow, boggy and peat soils, and their culturization hereof (M.O. Gorin, S.T. Voznyuk, R.S. Truskavets'kyi, Yu.T. Korobchenko)
- Cultural (anthropogenic) formation of soils in different world's natural zones, (e.g., Ukrainian Polissya, Forest Steppe, Steppe; Tropical Africa (V.D. Mukha);
- Nitrogen resources of chernozems (O.A. Chesnyak);
- Large-scale studies for soils in Belgorod oblast (1962-1972) and drawing up an atlas of soil-maps of collective and State farmlands in [1:10,000] scale for agro-industrial purposes (D.G. Tykhonenko, A.O. Georgi, M.O. Gorin);
- The Carpathian region soils (V.I. Kanivets'),
- Halomorphous and bottom-land soils of dry Steppes (M.I. Polupan),
- Regraded soils of Ukrainian Forest-Steppe (M.M. Shelyakin);
- Causes of soils alkalinity in dry Steppes of Ukraine (A.F. Nesterenko);
- Studies for chemistry of humus in different soils (O.O. Batsula);
- Suitability of Don Basin region soils for gardening (V.A. Jamal');
- Irrigation and halogenesis of soils (P.I. Kukoba);
- Evolution of chernozems (V.A. Bystry);
- Mochar soils (A.I. Sulyma, M.I. Polupan, E.V. Yarovenko);
- Agrogenetical characteristics of Ukrainian soils (O.P. Kanash);
- Solodized soils (E.I. Yashinova);
- Floodland solodized soils (D.I. Kovalishin);
- Agrogenetical characteristics and bonitet assessment of Kazakhstan soils (B.P. Loboda, V.A. Bobrov, V.S. Gusak);
- Improvement of soils' fertility in Western Ukraine (I.O. Kotsiuba);
- Soil assessment (V.P. Kuz'michov, A.I. Siry).

After Academician A. N. Sokolowski's passaway in April 25, 1959, management of the Soil Science Chair was entrusted to his disciple and the follower, Prof. O.M. Grinchenko, Agricultural Sciences Dr., Honored Science Worker of Ukrainian SSR. He headed the Chair for 20 years (1959-1979) since being the Rector of Kharkov Agricultural Institute during 1959-1969. Under guidance of Prof. O.M. Grinchenko, the Chair continued the studies of Ukrainian soils.

Agronomic Soil Science initiated by Academician O.N. Sokolowski was further developed in proceedings of such scholars as G.S. Gryn', A.F. Yarovenko, V.D. Kysil', I.A. Shelar, M.I. Laktionov, N.V. Dubov's'ka, A.O. Georgi, D.G. Tykhonenko, V.D. Mukha, O.A. Chesnyak.



**O.M. Grinchenko (1904-1997)**

Consequently, the staff of Doctors of Sciences and Professors was complemented by: A.F. Yarovenko (1970), M.I. Laktionov (1978), V.D. Mukha (1982), D.G. Tykhonenko (1984), and Candidates of Sciences therecent Graduate Students of the Chair: L.I. Vasilieva, M.O. Gorin, I.F. Pavlenko, Y.T. Korobchenko, L.P. Krotkevich, V.S. Tarara, L.M. Kolesnikov, V.F. Ivanov, O.P. Kiriya, Sharma Surrender (India), Garba Zachari (Niger) et al. The Chair of Soil Science led its methodical work activities to prepare young specialists for realm of agriculture all over the former Soviet Union. The Chair teachers trained 2nd and 3rd year- students at faculties of: Agrochemistry and Soil Science, Plants' protection, Agronomy, Economy, Land survey engineering, and Forestry engineering. On the total, over 100 Masters- of Arts were taught and trained for 76 countries around the world.

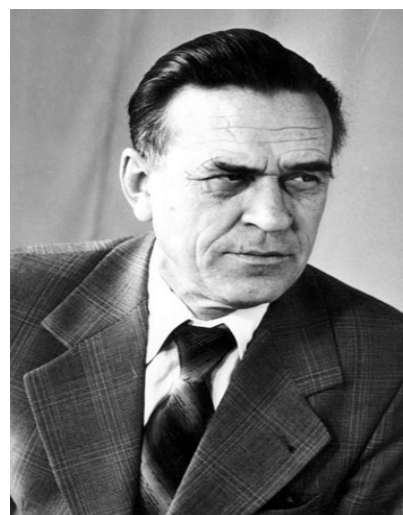
In 1977, the Institutewas repositioned to a new place, on farmlands of R&D Enterprise "Communist" (titled "Dokuchaevske" since 2004).

The Dokuchaev Chair facilities were housed on two basement floors of Tutorial building #4, placing altogether: four educational Labs, two lecture halls, two weight-measurement rooms, a Museum-Hall of Geology and Mineralogy, and a Museum-Hall-Laboratory of Genesis and Cartography of Soils, displaying >150 (1-3 meter deep) monoliths of soil selected during annual tutorial practices (1962-1972) of 3d-year students from Faculty of Agrochemistry and Soil Science under guidance of Dr. D.G. Tykhonenko, A.O. Georgi and M.O. Gorin.

In 1979, the Chair was headed by Prof. Mykola Illich Laktionov, Doctor of Agricultural Sciences and the disciple of Academician O.N. Sokolovs'ky.

Having been a Pro-rector of the V.V. Dokuchaev Agricultural University (1969-1993) and its Rector (1993-1996), he conducted the Chair from 1979 to 2005. By that time, the Dokuchaev Chair continued sciential traditions commenced in earlier years of its functioning.

The scientific credo of Prof. M.I. Laktionov was his view of organic part of soil not as a certain "organic matter", but as a complicated and dynamically active chemical composition of organo-mineral compounds, with it stable properties. Resting on this view, he



**M.I. Laktionov (1926-2007)**

employed then-existing methods, and invented his own research techniques, with aim to study properties of humus rather than its variable composition.

Since 2005, Prof. D.G. Tykhonenko (Dr. of Agricultural Sciences) who before was the Dean of Soil Science and Agrochemistry Faculty (1972-1996), and Pro-Rector on educational work at V.V. Dokuchaev NAU (1996 - 2009) was elected for position of Head of the Soil Science Chair.

The Chair staff enlisted then four Professors doctors: M.I. Laktionov, D.G. Tykhonenko, S.Yu. Bulygin, M.O. Gorin,



**D.G. Tykhonenko (birth 1937)**

six associate Professors cand. Sci: V.V. Degtyaryov, V.S. Tarara, L.L. Velichko, K.B. Novosad, O.M. Kazûta, O.Yu. Āekar; Lecturer V.S. Tischenko, PhD. s.-g. n; Assistant S.V. Krohin; three senior laboratory assistants: V.O. Maliuha, N.P. Bulat, G.M. Cherednychenko; laboratory assistant O.S. Yaremenko.

In 1999-2002. Chair'sDoktorant was V.I. Filon (Assistant Prof. of agricultural chemistry) who in 2011 hadviva voce his Doctoral thesis "Diagnosis& Eco-FriendlyControl of Soils' Transformation due to Fertilizers Application".

Since 2012, the Dokuchaev Chair is headed by Prof. V.V. Degtyaryov (Dr. of agricultural sciences), who worked as Deputy Provost of the correspondence education (1993-2001), Dean of the Faculty of Soil Science and Agrochemistry (2001-2013) and the first Vice-Rector Of V.V. Dokuchaev NAU (since February 2013).

He hadviva voce his Doctoral thesis "Colloidal-Chemical Characteristics of Humus-AccumulativeSoil-Formation& Fertility of Natural &Agrogenous Chernozems of Left-Bank Forest-Steppe And Steppe of Ukraine" in 2010.

Since 2005, the Chair operates its Research & Production Laboratory forSoils' Defense whose sciential heads were Prof. S.Yu. Bulygin and V.V. Degtyaryov, managing fellows – Master S.B. Kalûga, PhD D.V. Gavva, lecturer S.V. Krohin.

The Chair teachers have been conductingtheir classes with students of all faculties, covering the whole scope of subjects, e.g.: Geology withBasics of Mineralogy, Soil Microbiology, General Soil Science,Partial Soil Science,Soil Science with Basics of Geology, Soils of the World, Soil Cartography, Environmental Soil Science, Soil Protection, Biogeochemistry of Soil Cover.

During 2001-2006, the Chair authors have published the following tutorials and study-books: M.I. Laktionov // Agro-Soil Science; D.G. Tykhonenko // Partial Soil Science; D.G. Tykhonenko et al. // Cartography of Soils; Geology withBasics of Mineralogy; Soil Science; Microbiology of Soils; Laboratory & Practical Classes Guide; M.I. Laktionov et al. // Laboratory Workshop on Soil Science.



**Laboratory of soil protection  
(Prof. M.O. Gorin with post-graduates  
O. Morgunova and Ya. Gnidenko)**



**V.V. Degtyaryov (birth 1958)**

Teachers of the Dokuchaev Chair issued about 20 methodological recommendations on self-conducted and individual work of students, course and diploma design etc. Educational work has traditionally been closely associated with scientific activities.

Thus, the scientific work involves staff fellows, graduate students, masters and II-V years students to conduct(on initiative (gratis) basis) the scientific



studies under the State- ruled "Fertility, Protection & Ecology of Soils in Polissya and Forest-Steppe of South-East Ukraine" Scientific & Technical Program coordinated by the O.N. Sokolovsky ISSAR (the principal profile Agency in Ukraine).

The Dokuchaev Chair Scientific Program is aimed at executing the State policy of land protection and fertility reproduction of various soils in Polissya and Forest-Steppe of Ukraine.

In the latest history, the Ukrainian soil cover was subjected to considerable anthropogenic loads resulting in degradative mutations that entail: reduced amount of nutrients and humus, increased acidity, destroyed soil structure, compaction of ploughed layer, evolution of water-erosion processes, homogenous pollution of soils and, ultimately, to reduction of the land fertility. To this end, the Chair lecturers were involved in the State research program dedicated to soil fertility upgrade, agro-industrial characteristics and classification of soils.

Research team led by Prof. V. Degtyaryov and enlisting assistant Prof.s, O. Čekar, S. Krohin, assistants O. Morgunova and O. Panasenko, explores an influence of culturization on transformation of organic part of soils. Very significant regularities were identified in origin of active and passive humus, reactivity of humus, defining its functional (chemical) groups and their role in shaping the adsorption ability of soils of different commercial purposes.

The scientific crew headed by Prof. D. Tykhonenko, directs its search on studies for impact of agro-business (i.e., anthropogenous) activities on current processes of soil genesis, agronomical characteristics and ecological modes of soils in plainland landscapes of Polissya and Forest-Steppe of Ukraine (including bio-diagnostics, systematization, assessment and evolution).

These studies enabled an elaboration of a paleographic scheme of plainland landscapes evolution and soils formation during Holocene quarter era (authors: Tykhonenko, Gorin, Tischenko), as well as Classification of Soils (by e. g. Tykhonenko) that ensured formation of Classification-List of Soils of Ukraine and their agricultural groupings as a main scientific basis for further soil surveys over the State, using remote sensing technologies.

Prof. M. Gorin substantiated theory and practice of agrochemical culturization of floodplain soils of Polissya and Forest-Steppe of Ukraine, allowing a 200-300 % increase of yields from natural grasslands.

Assistant Prof. O. Kazûta has proven that forested alluvial floodplain soils of upper and middle Seversky Donets basin evolve perhydromorph-accumulative type of soil formation, due to high activity of  $\text{Ca}^{2+}$  and inactivity of sodium ions caused by intrusion of Donets river- bottom into Mezozoy carbonate (usually caulky) strata.

Docent K. Novosad and Assistant D. Gavva accomplished their soil studies to detect an impact of forest crops on agricultural quality of chernozem soils.

Docent L. Velychko, owing to success in studies for influence of various land-purpose forest-strips, has identified very important laws of variations in soils' characteristics and fertility.

Since 2008, the Dokuchaev Chair fellows are Docent A. Ačasova and Dr. A. Ačasov who in 2010 defended (under scientific guidance by Prof. S. Yu. Bulygin) his Doctoral thesis "Soil-Geo-Information Preconditions for Anti-Erosion Optimization of Agro-Landscapes: Theory & Practice".

In recent years, the Dokuchaev Chair of Soil Science set up, updated and strengthened its scholar contacts with colleague- fellows from all over the world.

Particularly fruitful was creative collaboration with Chairs of Soil Science at such

institutions in ex- USSR as: M.V.Lomonosov Moscow State University(Faculty of Soil Science) [Academician G.V.Dobrovolsky (RAAS) and Academician S.O.Shoba; (RAAS)], K.A.Timiriachev Moscow Agricultural Academy [Prof. M.F. Ganžara]; Saint-Petersburg State Agricultural University [Prof. I.M. Dons'kih]; V.V.Dokuchaev Central Museum of Soil Science (RAAS) [Prof. B.F.Aparin]; Voronezh State University [Prof. B.P.Ahtyrcev]; Nizhny-Novgorod (Gorky) Agricultural Institute [Prof.B.A.Nikitin]; I.I.Ivanov Kursk State Agricultural Academy [Prof. V.D.Mukha]; V.I.Ulyanov-Lenin Kazan State University [ Prof. G.F.Koposov]; Belgorod State Agricultural Institute [Associate Prof. I. M. Kolesnikov]; Southern Federal University (Rostov-on-Don) [Prof. V.F.Valkov] - all in Russian Federation; Belarusian R&D Institute for Soil Science and Agrochemistry [Prof. A.Mešovskiy] - Republic of Belarus; Moldavian N. A. Dimo R&D Institute at Moldavian State University [Prof. G.I.Stas'ev]; Moldavian M.V.Frunze State Agricultural Institute [Academician V.G.Ungureanu]- both in Republic of Moldova; Georgian State Agrarian University [Prof. T.F. Urushadze]; I.Chavchavadze Georgian State University [Prof. V.G.Lejava] -Republic of Georgia.

Relevant cooperation is continued with scientists from certain countries of the former Soviet block (now member states of EU: Estonian Agricultural Academy (Tartu) [Prof. L. Yu. Rejntam] – Republic of Estonia; R&D Institute of Forage Crops (Pleven) [Dr. Ivan Pačev] – Republic of Bulgaria.

Polish-Ukrainian cooperation has been enhanced within Euro- Project "The Role of Science in Formation and Professional Upgrade of Advisory Staff".

Certain proposals were made [c/o Prof. M.O. Gorin] to Polish colleagues in Warmian-Masurian University (together with the Institute of Fertilizers and Soil Science in Pulawy-town) on fabrication of eco-friendly food products and accomplishment of "The World's First Chair of Soil Science" Joint Project.

The Dokuchaev Chair continues its successful work on writing and publishing educational and scientific literature. Since 1995, more than 30 volumes of serial Bulletin of Kharkov National Agrarian University "Soil Science & Agricultural Chemistry, Agriculture, Forestry" were issued [Chief Editor – Prof. V.V. Degtyaryov & Executive Secretary – Associate Prof. K.B. Novosad].

Since 2009, the following items were issued:

-the book "Geology with Basic Essentials of Mineralogy" by authors: P.V. Zaritskii, D.G. Tykhhonenko, M.O. Gorin, V.V. Andreev, V.V. Degtyaryov, edited by Prof. M.O. Gorin (522 pps.), and affirmed by Ministry of Education, Ukraine as a typical text-book for agronomic, geological, ecologic and engineering specialities of III-IV accreditation levels Universities;

-Text-book "Laboratory Workshop on Soil Science" (authors: D.G. Tykhhonenko, V.V. Degtyaryov, K.B. Novosad, L.L. Velichko et al.; edited by Prof. D.G. Tykhhonenko and Prof. V.V. Degtyaryov) for students of agronomic, ecologic and other specialities of III-IV levels- accreditation Universities;

-a series of lectures on "Classification of Soils", "Evolution of Soils", "Doctrine of Soil Cover Structure" published by Prof. D.G. Tykhhonenko for students and postgraduates of the Faculty of Soil Science and Agrochemistry; and a lecture "The Earth and Geological Processes" published by Prof. M. A. Gorin, as well as "Workshop on Soil Science Geobotany and Agrochemistry" textbook for undergraduates of Land-Engineering and Land-Management faculty;

a monograph "Humus of Forest-Steppe And Steppe Chernozems" written by Prof. V.V. Degtyaryov.

Today, the Dokuchaev Chair fellows are: Prof. V.V. Degtyaryov, Dr. s. g. n.; -

Prof. D.G. Tykhonenko, Dr. s. g. n. Prof. M.O. Gorin, Dr n. biol.; senior scientist Yu.L. Tsapko, MD, asst. n.; associate Prof.s, candidates of s. g. L.L. Velichko; K.B. Novosad, S.V. Krohîn, O. M. Kazûta, O. Yu. Čekar, A. O. Ačasova; candidate A.O. Kazûta, senior lecturer, PhD. s.-g. n. D.V. Gavva; assistants O.I. Morgunova, O. S. Panasenko. Postgraduate students Yu.V. Degtyaryov, I.O. Cherednichenko, R.Yu. Usata.

Since March 2013, the Dokuchaev Chair resumed its specialized academic Council #K 64.803.02 work on viva-voce defense of Candidate theses on specialty #06.01.03 "Agro-Soil Science & Agro-Physics".

In recent years, the Dokuchaev Chair tutorial staff was granted with 7 Invention Patents of Ukraine on elaboration of innovative slow-dissolving fertilizers; recycling solid household waste into organo-mineral fertilizers; soil processes diagnosis.

R&D activities conducted by Dokuchaev Soil Science Chair involving students and postgraduates, keep on contributing to the State Database of Soil and Land Resources of Ukraine (as its main wealth), as well as ecological-genetic and agro-industrial properties of soils, their environmental regimes and present-day status, evaluation parameters, in word: - everything that is required by practice of soil mapping and land- assessment, being now of actual importance under conditions of global economy crisis phenomena.

The Europe- highest rate of land- rental, naturally inherent to Ukrainian soils, should necessarily be accounted of in anti-crisis programs of Governmental and profile State-ruled institutions, including measures on a new round of large-scale surveys of soils for cadastral-precise determination of their resource capacities, for assessment of land as a commodity, for its protection and sustainable use.

The team of V.V. Dokuchaev Soil Science Chair members are festively facing the oncoming 200th anniversary of their dear Agro-University.

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