

SOVIET-ERA WOMEN PEDOLOGISTS

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Abstract

Pedology has a complex and ambiguous history. Soil science - science is very laborious, it requires long expeditions in the most diverse regions of our country. The most important section of soil research is analytical work in laboratories using sophisticated modern equipment. A significant part of all these diverse studies is carried out by pedagogical women, but they are inexcusably short of their work and achievements. The study includes biographies and essays not only about outstanding scientists - doctors and professors, but also many talented specialists - women: "field workers", analysts, cartographers, editors, teachers, without a modest labor of which outstanding scientific results and new knowledge of nature would be impossible (Mirskaya *et al.*, 1993). In many areas of soil science, many women work - more than 60% of the total number of scientists (Agababyan *et al.*, 1995; Aleksandrova, 2001; Ammosova, 2000). In more than 100 years of history of soil science, four generations of women scientists (one generation covers a 20-year period). Some of them discovered new or successfully developed the main directions in soil science, organized laboratories or replaced men in leading positions in military and post-war years, created their own scientific schools, grew a galaxy of talented students. Others selflessly worked (and continue to work), receiving primary scientific data on expeditions, in experimental fields, in laboratories, or worked as editors, secretaries, assistants to science leaders (Agamova *et al.*, 2009). Both of them served for the benefit of science, not betraying it in a difficult time, devoting their lives entirely to it, investing their soul and mind, giving all energy without receiving from the scientific community the due attention that they deserved.

Key words: Biographical review, Pedology, Soviet-era, Women pedologists.

In comparison with such natural sciences as botany, zoology and geology, pedology is a relatively young science that was formed in Russia only at the end of the 20th century. Perhaps, therefore, there have not yet appeared in the literature bibliographic directories on soil scientists, although among them there are the names of such prominent scientists as V.V. Dokuchaev, V.I. Vernadsky, P.A. Kostychev, N.M. Sibirtsev, K.D. Glinka, K.K. Gedroits, I.P. Gerasimov, B.B. Polynov, V.A. Kovda and many other famous specialists (Agamova *et al.*, 2009).

The article contains information about the first women scientists, born in the XIX century and young scientists, our contemporaries, have already managed to prove themselves in science.

The material of the study on biographical information on the volume and nature is very different: there are among them bright literary essays, reports on scientific activity, just brief references. Unfortunately, this is due to the varying degrees of completeness of the initial data, especially for generations that have passed away.

In the XIX century, science was not only a pedology, it was almost exclusively a male sphere

of activity. But the troubles and hardships that the history of our country abounds in have made it necessary to involve women in various fields of scientific and economic activity. Russian women are curious and selfless, quickly joined the ranks of scientists as soon as they could get a university education in the first decades of the XX century.

Later, this path was not simple and, as the author found out, included three "waves of feminization" of soil science. When it was most difficult - in the years of wars and social upheavals, women carried on their shoulders all the hardships, becoming the keepers of traditions and accumulated experience, continuing the research they had begun and exploring new ways in science, creating their own schools, where they sprouted young scientists (Allahverdyan *et al.*, 2000).

A noticeable increase in the number of women in science since the end of the XIX century. until about 1930, which coincided with the first wave of feminist movement in most countries of Europe and North America. The second "wave" of feminization began in the 1960`s and coincided with a rapid and extensive growth science. The mass arrival of women in science at

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this time is associated with the accelerated formation of a wide network of new research organizations, numbering thousands of jobs. The third "wave" has appeared connected with "compression" of the science, caused by a social and economic crisis of 90th (Agamova *et al.*, 2009).

At the moment, we can talk about the equality of men and women in the educational sphere, but the equal access of women-Russians to scientific studies adjoins with the phenomenon of limited representation of women in the management bodies of science, in particular, scientific foundations - the newest organizational structures of modern science (Agamova *et al.*, 2009).

So, even in the 21st century, complete equality between the sexes in many spheres has not been achieved. And the main obstacle to balancing the scales is not the social and economic factors, but the stagnant world outlook of the society, which is provoked by these factors. Many more achievements and vivid examples that prove the mental, physical, psychological and many other abilities of women will be required by society, so that the notion of a "weak" and "dependent" gender will disappear.

Let them understand that they (women), taking care of the cradle of a person, establishing the games of his childhood, teaching his mouth to babble and the first words and the first prayer, are made by the main architects of society. The cornerstone is laid by their hands ... It is not the status of a woman in society, but the education of her, in which the upbringing of all mankind is based, - this requires a change.

MATERIAL AND METHOD

Biographical information on the volume and nature are very different: there are among them bright literary essays, reports on scientific activities, just brief briefs. Unfortunately, this is due to the varying degree of completeness of the initial data, especially for generations that have left their lives.

Primary information was obtained from literary and archival sources, including the Internet, and, mainly collected using questionnaires that were filled by soil scientists themselves or their colleagues, in addition, interviews were taken. As a result, data were collected on 347 of the most famous soil researchers.

The scientific work of some outstanding soil researchers continues with young colleagues (50-60 years). Information about women of different generations (especially candidates of science), unfortunately, is not even and incomplete, probably due to lack of information about the biographical collection being prepared, or unwillingness to

provide information about yourself for any reason; for the first generation, because of the remoteness in time. In order that the connection of times should not be interrupted, short information on individual representatives of the fourth generation of soil scientists who had time to prove themselves in science was included in the handbook.

Analysis of statistical data shows that the trend of feminization is uneven in various scientific branches. Thus, in 1993, women made up 50% (or more) of specialists in such fields as pharmacology (68.6%), biology (61.8%), chemistry (59.7%), medicine (51.7%), technical sciences (50.4%), geography (50.0%), as well as in most social and human sciences (art studies - 51.4%, pedagogy - 55.7%, psychology - 60.2%, philology - 62.4%, the economy - 62.5% of women). Less than 40% of women are represented only in two fields of science - physical and mathematical (35.5%) and political (37%). At present, in terms of the pace and scale of the feminization of science as a global trend, Russia is far ahead of the country's "Big Eight" (excluding Italy), where in the total number of scientists and engineers (non-academic sector) in 1986-1992, women averaged 13.4%.

After the revolution, higher education institutions opened the doors of classrooms to women, and many of them took the opportunity to get a broad university education.

RESULTS AND DISCUSSIONS

The entry of women into soil science, as in other sciences, was difficult, primarily because of the impossibility of obtaining higher special education. In the 1960's, Russia made its first attempt to admit women to university studies, but it failed because society was not ready to recognize the equal rights of women and men to higher education (Belyakova, 1962; Bazilevich, 1967; Koloskova, 1984; Godunova, 2002).

A thorough review article by the author, which identifies four generations of women soil scientists, describes the difficulties of the representatives of the first generation in obtaining a higher special (university) education, the history of the entry of the first female scientists into science, the contribution of women to the development of different directions of soil science, told about the wonderful teachers and talented organizers of science.

In more than 100 years of history of soil science, four generations of women scientists have been singled out (one generation covers a 20-year period). Generations are outlined in the major historical periods of our country: pre-war, post-war, Brezhnev and transitional (Mirskaya *et al.*, 1993; Sokolov *et al.*, 1982; Vasilyevskaya, 1998; Zakharyina, 1985).

However, in the first two generations, women were practically absent, so the first generation of pedologists for women was the third generation of Russian soil scientists (Dimo, 1946; Dimo, 1999; Dunaeva, 2001; Firsova, 1997; Kononova, 1984; Lebedeva, 2002). Now, in the most difficult time for science, the fourth generation of female researchers is developing.

The first women's parents came from medicine (microbiology), chemistry and agronomy. Female names appear in the press at the beginning of the twentieth century: V.A. Balts, E.A. Domracheva, etc. Reports on the participation of women in the development of soil science at the meetings of the Soil Committee and the first publications in "Materials on the study of Russian soils" in 1906; – E.A. Domracheva; in the journal "Pedology" in 1907 and V.A. Balts in 1908. Initially, women were engaged in methodological developments in microbiology, soil chemistry. Then they became interested in problems of genesis, geography, and soil physics.

The first women-pedologists, who achieved significant success in science (defended doctoral dissertations, awarded the high scientific title of professor) - E.N. Ivanova, N.N. Sushkina (Popova), Z.Yu. Shokalskaya - began to work in the field of soil science immediately after the revolution or the end of the civil war: (in the late 10`s - early 20`s) (Mirskaya *et al*, 1993; Sokolov *et al*, 1982). But in full, women joined the ranks of soil scientists much later than men, beginning in the 1930`s.

Among the women-pedologists, born in 1902, 1907 and 1912, there are the greatest numbers of doctors of science.

During the Great Patriotic War (GPW), women scientists replaced men in institutions and other institutions, performing the duties of heads of laboratories, departments, departments. Z.Yu. Shokalskaya saved the collections during the siege of Leningrad, and then, together with her colleague, restored the exposition of the Soil Museum named after V.V. Dokuchaev.

E.I. Shilova acted as deputy. Dean of the Biology and Soil Faculty of Leningrad State University. Immediately after the end of the Great Patriotic War, due to a sharp reduction in men due to military losses, the leaders of soil laboratories and departments were assigned the largest number of women in the history of soil science: M.M. Kononova and V.V. Tserling in the Soil Institute in Moscow, L.N. Alexandrov in the Leningrad Agricultural Institute, Z.Yu. Shokalskaya in the Soil Museum, M.A. Glazovskaya in the Soil Institute of the Academy of Sciences of the Kazakh SSR and others.

For the sixties, the extensive growth of Soviet science is characteristic. In this period new scientific institutions are opening, branches of the Academy of Sciences of the USSR are being created, science cities are being built. New soil, biological and geographical institutes are being organized.

Women-pedologists, who form the third generation of soil scientists (born in 1939-1958), entered an active creative life in the 1970`s and 1980`s, when stagnation in the country's economy and its further crisis began. If at the beginning of the period the situation in science was still favorable, then from the mid-1980`s it changed significantly and deteriorated sharply in the early 1990`s. At that time, there were mass reductions of scientists, as well as their departure abroad and outflows to other sectors (mainly business and politics), more often male scientists (Tyurin, 1957; Zonn, 1999). In connection with this, the percentage of women in science has increased somewhat. However, many women also left the country or the ranks of scientists, especially due to several reductions that took place at the Academy sciences and other scientific departments in the early 90-ies under the slogan of the reorganization of science (Agamova *et al*, 2009; Godunova, 2002; Sotnikova *et al*, 1996; Vorobyeva, 1998; Zvereva, 2002).

Thus, if the first two waves of feminization of soil science proceeded against the background of a general increase in the number of scientists, then the third (modern) - against the background of their reduction. Women began to predominate significantly among soil scientists (accounting for more than 60 and even 70%).

Over the whole history of soil science, more than 132 women pedologists have defended their doctoral dissertations (incomplete information). It's not much, but it's not only the most talented, hardworking, but also the most organized and purposeful scientists. In the first generation there are 42, in the second - 60, in the third - 30.

Women-scientists of the third generation have not yet fully realized themselves, since the maximum number of defenses of doctoral dissertations falls on the age of 50-60 years, and a significant proportion of women of this generation have only entered these boundaries.

The first woman to defend her doctoral dissertation (in 1939) was Evghenia Ivanovna Ivanova. In the forties, women rarely defended doctoral dissertations. The military five-year period and the beginning of obtaining such a high qualification of women in soil science affected the situation. In the 1950`s, the number of doctoral defenses rose to 13 in the decade, remained at the

same level in the 1960`s, increased significantly (to 20) in the 1970`s and left in the next decade at the same level. In the 1990`s, the number of defending doctoral dissertations by female soil scientists again sharply increased - two to three times compared to previous decades. Probably, the scientists reacted so to the economic difficulties of the transition period - the collapse of the USSR. In addition, the number of expeditionary studies stopped sharply, and in some years the expeditionary studies completely stopped, and the scientists focused on the preparation and completion of the doctoral works.

The change in the number of doctoral protections records three waves of professional development for women soil scientists: in the 50's, 70's and 90's, having different roots. The first wave is connected with the consequences of the war (the reduction in the number of men in science due to military losses in 1941-1945), the second - with the increase in the number of jobs due to the opening of a large number of scientific institutions, the third - with a decrease in the prestige of science and a decrease in funds on its development, which caused the departure of a large number of male scientists from science.

In the broader time step (twenty years), the number of doctoral protections by women-pedologists from 40-60-ies to the last twenty years grew in the arithmetic progression ~ 2-fold.

Studies in the field of biochemistry, organic matter of soils were conducted and conducted by women. Between the names of Academician I.V. Tyurin and Professor D.S. Orlova is exclusively female names: M.D. Ryndalevskaya, M.M. Kononova, L.N. Alexandrova, V.V. Ponomareva, L.A. Khristeva, K.V. Dyakonova, I.V. Alexandrova, M.I. Dergacheva, T.A. Trifonova, Ya.M. Ammosov, N.P. Belchikova, E.I. Gorshkova, L.A. Grishina, N.A. Titov and others. At the same time, in the 1950`s and 1970`s, three outstanding female scientists: M.M. Kononova, V.V. Ponomareva, L.N. Alexandrova was creative collectives, where detailed studies of the organic matter of soils were carried out. The first two were pupils of Academician I.V. Tyurin. The spirit of competition existing between them contributed to the development of science. All three achieved significant creative successes, founded their own schools, and was awarded top professional titles and awards.

In the field of soil biology, a whole constellation of remarkable women scientists has worked and continues to work: N.I. Bazilevich, E.A. Shtina, E.M. Samoylova, A.A. Titlyanova, T.L. Bystritskaya, T.I. Evdokimova, B.R. Striganova, L.A. Grishina, L.I. Domracheva, T.G.

and N.G. Dobrovolsky, G.V. Kovaleva, G.K. Evdokimova, N.V. Lukin and many others. Especially a lot outstanding researchers in the field of soil microbiology: N.N. Sushkina (the first woman professor of the Moscow State University in the field of soil science - microbiology), E.A. Domracheva, V.P. Firsova, E.A. Shtina, T.V. Aristovskaya, A.V. Rybalkina, I.P. Babieva, T.G. Mirchink, G.M. Zenova, O.E. Marfenova, L.M. Polyanskaya, N.V. Verkhovtseva and others. Many of them founded new directions and created their own schools.

Agrochemistry develops largely due to the work of women scientists: V.V. Tserling, O.A. Biryukova, L.P. Volleidt, I.E. The Queen, T.B. Kuznetsova, E.K. Kruglova, T.N. Kulakovskaya, E.Kh. Rempe, V.B. Zamyatinina, L.E. Lyubarskoy, L.A. Lebedeva, E.A. Zverevoy, A. H. Kulikova, D.M. Heifetz (Straussberg), T.P. Slavina, S.F. Korablevov, O.V. Sdobnikova, L.K. Shevtsova, I.A. Lavrovoy, G.S. Lipkina, G.E. Merzloy, L.S. Travnikovoy, V.V. Chuprova, N.V. Eliseeva, L.I. Inisheva, V.N. Kreshtapova, I.N. Lozanovskoy, Z.A. Sinkevich, S.F. Spitsyno, O.I. Antonova, N.V. Verkhovtseva, M.P. Chub, N.I. Akanova, T.A. Titova, T.N. Avdeeva, T.N. Bolisheva and many others.

I.I. Feofarova, E.A. Yarilova, E.I. Parfenov stood at the origins of micromorphological studies in our country. Many women worked and worked in the field of mineralogy and micromorphology of soils: M.M. Shukevich, L.S. Travnikova, N.G. Minashina, A.I. Romashkevich, T.D. Morozova, T.A. Sokolova, G.V. Rusanova, T.V. Tursina, E.B. Skvortsova, N.E. Rubilina, N.P. Chizhikova, J.N. Matviyishina, M.I. Gerasimova, T.S. Zvereva, M.P. Verba.

Traditionally in the field of soil chemistry, many women have worked and continue to work: E.A. Domracheva, E. V. Arinushkina, E.I. Shilova, L.A. Vorobyova, T.A. Sokolova, G.V. Motuzova, Ya.M. Ammosov, V.I. Roslikova, E.G. Nechaeva, L.N. Alexandrova, M.D. Rydalevskaya, L.K. Sadovnikova, T.A. Sokolova, L.F. Tararina and many others.

Traditionally, in paleopedology, especially in the area of the study of Pleistocene soils, women: N.A. Sirenko, T.D. Morozova, N.I. Glushankova, M.I. Dergacheva, J.N. Matviyishina, G.A. Vorobyova, S.A. Sychev, V.S. Zykina, L.A. Gugalinskaya, etc. Still, it should be noted that most of them conducted research in conjunction with male geologists or paleogeographers: N.A. Sirenko - with M.F. Veklich, T.D. Morozova - with A.A. Velichko and others.

A significant contribution to the development of genesis and geography of soils was

made by: V.A. Balts, E.N. Ivanova, O.N. Mikhailovskaya, N.B. Wernander, K.I. Trofimenko, E.V. Lobova, M.N. Pershina, V.V. Ponomareva, N.N. Dzents-Litovskaya, O.A. Polyntseva, A.V. Baranovskaya, N.I. Bazilevich, N.A. Nogina, I.N. Skrynnikova, E.A. Afanasyeva, A.V. Koloskova, M.A. Glazovskaya, I.V. Zaboeva, L.G. Elovskaya, K.A. Ufimtseva, T.A. Romanova, A.I. Romashkevich, V.P. Firsova, E.A. Grishina, T.L. Bystritskaya, E.M. Samoylova, N.A. Karavaeva, I.I. Lebedeva, V.D. Vasilievskaya, M.I. Gerasimova, E.I. Pankova, I.S. Urusevskaya, M.N. Stroganova, E.G. Nechaev, T.V. Korolyuk and others.

Especially a lot of geographers among the first and second generation of soil scientists. Their classification and cartography are closely related to the geography and genesis of soils. Many outstanding women scientists have also traditionally worked in these areas: Z.Yu. Shokalskaya, E.N. Ivanova, E.V. Lobova, M.A. Glazovskaya, N.A. Nogina, I.A. Zaboeva, I.I. Lebedeva, V.D. Vasilievskaya, N.B. Vernander, M.I. Gerasimova, A.A. Erokhina, E.N. Rudneva, N.A. Karavaeva, E.I. Pankova, L.P. Rubtsova, M.S. Simakova, M.N. Stroganova, I.P. Gavrilova and others.

Even in an industry such as soil reclamation, which often requires technical knowledge, women worked actively: V.G. Agababyan, L.P. Belyakova, A.P. Biryukova, T.N. Kulikovskaya, I.N. Skrynnikova, N.I. Bazilevich, A.F. Vadjunina, N.B. Wernander, L.V. Eterevskaya, E.S. Migunova, N.G. Minashina, A.V. Novikova, A.M. Derbentseva, L.M. Burlakova, G.V. Zakharyina, A.M. Aleksandrova, T.A. Romanova, I.B. Archegova, L.I. Inisheva, I.N. Lyubimov, N.P. Solntseva, I.F. Yurchenko, I.V. Semendyaeva, E.I. Godunov and others.

Many women worked in the field of agropedology: A.P. Biryukova, L.M. Burlakova, V.P. Vasilko, N.B. Wernander, A.I. Kuznetsova, G.F. Lebedeva, K.I. Trofimenko, V.V. Chuprova, I.M. Shaposhnikova, O.G. Kotlyarova; agrophysics and soil physics: A.F. Vadjunina, V.N. Dimo, A.V. Koloskova, I.V. Kuznetsova, M.K. Melnikova, N.A. Mikhailova, S.M. Pakshina, L.A. Razumova, E.D. Korchagin, N.I. Sanzharova and others; forest soil science: L.A. Grishina, M.N. Pershina, E.S. Migunova, E.B. Skvortsova, V.P. Firsova.

In the development of new trends in pedology, a leading role belongs to the female scientist: the protection and ecology of soils - L.A. Grishina, G.V. Motuzovoy, E.M. Parakshina, L.N. Tashninova, L.K. Sadovnikova, L.M. Burlakova, E.I. Gagarina, N.P. Sorokina, L.S. Ilyina, T.L. Egoshina, I.P. Breus, L.V. Rudnevoy, I.M.

Ryzhovoy, V.S. Arzhanova, E.F. Vedrovoy, urban pedology - M.N. Stroganova, I.S. Urusevskaya; archaeological soil science - M.I. Dergacheva, G.V. Vorobyevoy, S.A. Sychevoy, A.A. Golieva, O.S. Khokhlova.

Since the 70's M.A. Glazovskaya, N.P. Solntseva, E.M. Nikiforova, V.D. Vasilyevskaya, E.I. Gagarina, E.G. Nechaeva and other scientists are actively developing such a direction as the geochemistry of soils and landscapes.

None of the directions of pedology could exist without the painstaking work of neat and conscientious laboratory assistants, skilled grinders, talented engineers and technicians, the vast majority of who are women. Earlier (in pre-revolutionary and pre-war times), some of the scientists considered it necessary to indicate in the publication the name of the analyst.

Unfortunately, now this tradition is almost lost. But nevertheless the names of some remarkable experimentalists and analytical chemists are known, among them: E.I. Parfenova, A.M. Myasnikova, N.A. Pankov and many others.

Women have always been active participants in the All-Union (now Dokuchaev) the Society of Soil Scientists. They were elected to the leading posts of the society: vice-presidents, members of the Presidium and its responsible secretaries, members of the Central Council, chairmen of permanent at the Society of commissions and sub commissions on various sections of soil science. Many regional the divisions of the Society were also headed (and are headed now) by women for a long time.

Vice-presidents of the Company: N.B. Vernander (1966-1971), M.A. Glazovskaya (1966-1977).

Members of the Presidium of the Central Council: E.I. Ivanova (1958-1962), M.M. Kononova (1962-1971), L.H. Aleksandrova (1966-1981), I.V. Zaboeva (1971-1977), E.A. Shtina (1971-1977), M.A. Glazovskaya (1977-1981); T.N. Kulakovskaya (1977-1981); M.I. Andronova (1989-1996), N.P. Chizhikov (2000).

Responsible Secretaries of the Presidium: N.A. Nogina (1966-1971), M.S. Simakova (1971-1981), T.P. Kokovina (1981-1992), N.P. Chizhikova (1992-2000), I.N. Lyubimov (2000).

Awards, awards, titles are signs of recognition by the society and scientific community of the merits of the scientist. They are pleasant to receive not only men, but also women, especially if they correspond to the scientist's enclosed work and really received, significant scientific results.

The highest award is the Gold Medal. V.V. Dokuchaeva - was given to only two outstanding

women scientists: E.N. Ivanova in 1972 (at the age of 83 years), M.A. Glazovskaya in 1990 (at the age of 78 years) (Ivanova, *et al.*, 1949, 1965). The second most important award of soil scientists is the award to them. V.V. Dokuchaev received 12 women. Immediately after the end of the Great Patriotic War (1948-1952), this award was awarded to women annually, and then less and less often: in the 60`s and 70`s - twice a decade, in the 80`s and 90`s - once in a decade.

Among women there are no owners of Gold Medals: K.K. Gedroits and V.R. Williams.

A few times more women were awarded a premium to them. V.R. Williams.

The only winners among women-agrochemists were: L.I. Korableva (the gold medal named after D.N. Pryanishnikov) and V.V. Tserling (prize named after D.N. Pryanishnikov). Award for geographers - the award them. D.N. Anuchina - were awarded M.A. Glazovskaya and M.I. Gerasimova; for botanists - a premium to them. V.M. Komarova - N.I. Bazilevich; for geodesists and cartographers - a premium to them. F.N. Krasovskogo - N.A. Karavaeva.

Only E.A. Yarilova in our country was awarded the International Prize. V. Kubiena. Some of the more often women's merits (as part of large collectives) were awarded by the State Prizes of the USSR, Russia or other republics.

Wives of famous scientists are a special big topic. The success of men in the professional sphere largely depends on the companion of life, on her ability to create an atmosphere in the house that fosters scientific creativity, to provide life, to have certain professional qualities: to be a worthy interlocutor, and even an opponent, secretary, typist, proofreader and first editor. Many of the famous scientists repeatedly stressed the importance of wives in achieving their successes in science. V.V. Dokuchaev considered his first wife as a soil pedagogue. Some of the wives of prominent scientists had to sacrifice their professional activities for the sake of her husband's career. They often became the guardians of the labors of husbands or the successors of their work. Rarely, both family members (and husband and wife) achieved significant success in science.

Many women-pedologists are obliged to the parents' keenness on soil science. Some families comprise even three generations of pedologists. For example, these are the Yarilovs and the Rode-Sokolovs.

If for the representatives of the first generation the peak of protection fell to the age of 35-38 years, for the second one - 31-35 years, then for the future doctors of the third generation - for 27-30 years.

Great merit belongs to the employees of the Soil Institute. V.V. Dokuchaev in the dissemination of new methods of soil research, for example microscopic. Thus, I.I. Feofarova constantly propagandized them among soil scientists, patiently worked with numerous students, not taking into account neither limited time, nor with a poor state of health.

In Russia there was not a single soil scientist who possesses a micro morphological method, which would not have passed at least the initial stage of preparation for I.I. Feofarova.

E.A. Yarylova and E.I. Parfenova brought up a new generation of soil scientists - micro morphologists.

Women-pedologists have done a lot for the formation and development of soil science in the autonomous and union republics of the former Soviet Union.

Now the share of women scientists in Russia is much higher than in the whole world. They make up 40% of all scientists in the country; many of them run universities, research laboratories, departments and make outstanding discoveries.

CONCLUSIONS

The entry of women into soil science, as in other sciences, was difficult, primarily because of the impossibility of obtaining higher special education.

In more than 100 years of history of soil science, four generations of women scientists (one generation covers a 20-year period). Some of them discovered new or successfully developed the main directions in soil science, organized laboratories or replaced men in leading positions in military and post-war years, created their own scientific schools, grew a galaxy of talented students.

Analysis of statistical data shows that the trend of feminization is uneven in various scientific branches. Thus, in 1993, women made up 50% (or more) of specialists in such fields as pharmacology (68.6%), biology (61.8%), chemistry (59.7%), medicine (51.7%), technical sciences (50.4%), geography (50.0%), as well as in most social and human sciences (art studies - 51.4%, pedagogy - 55.7%, psychology - 60.2%, philology - 62.4%, the economy - 62.5% of women). Less than 40% of women are represented only in two fields of science - physical and mathematical (35.5%) and political (37%).

The first woman to defend her doctoral dissertation (in 1939) was Evgenia Ivanovna Ivanova. In the forties, women rarely defended doctoral dissertations.

Female pedologists are not only scientists, but also daughters, wives, mothers. They are the main concerns about home and family, the birth and upbringing of children. This topic is extensive and requires additional research.

We give only some facts. Most of the pedagogical women have children, many - two, rarely - three. Sometimes they had to take small children with them on an expedition, often children lived with them in soil hospitals.

Children, seeing the passion of their mothers with work their passion for traveling or conducting experiments, love of nature, chose the same or similar specialty.

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