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Daki Jordanov (1893-1978), the scientist who led Bulgarian botany up the steep slope

Bulgarian botanical science will always boast the names of its great trio of founding fathers: Nikolaj Stojanov, Daki Jordanov, and Boris Stefanov. The year 1993 marks the 110th anniversary of the first of them, and for the second, the 100th anniversary which we celebrate now; 1994 will see the 100th anniversary celebrations of the third.

Much has been written about Daki Jordanov, but most of it was biased – not just by accident. For years on end he had been the only hope and support for Bulgarian botanists, some of which had the reputation of being politically influential. For that very reason, my analysis of his well-known work will be based mainly on my personal recollection of his human and scientific traits, stemming from my long common work with him first as a student of his then as a close assistant. In so doing I will follow the advice he gave to those assembled at his 80th birthday ceremony, in 1973, when he said: "My testament will not be written. But those who knew me as a man, who followed my work as a scientist, a leader, a teacher, can draw their own conclusions. What is important is that you love the choice you have made (even if it were a second choice), that you burn with it even at the risk of being burnt up, and live to the idea that you must be useful". Indeed, all those whom he made love the science of botany and burn with it have the right to draw their own conclusions.

Born to be scientist

Daki was born on September 1st, 1893, in the town of Omurtag in N.E. Bulgaria, the fifth child in a poor carrier's family, with five more yet to follow. We can easily imagine a mother's struggle to bring up ten live and healthy children. Among them, according to the memories of his younger brother (Stanev & Velčev 1987), Daki was perhaps the most hard-working and diligent of all.

Having started work very early in life, Daki Jordanov somewhat belatedly undertook studies at the free Practical Agricultural School in the town of Šumen, obtaining a diploma of excellence in 1909. Thanks to the support of his oldest brother, he studied at the high-schools of Targovište, Razgrad and Šumen, and everywhere got excellent marks. Subsequently he studied at the Sofia University, again financially supported by his brother. With an interruption during the First World War, when he served and was

awarded a medal for courage, he graduated from the University in 1921. The subject of his diploma thesis was the flora of his home-town, Omurtag, and reveals the influence of the great Bulgarian botanists S. Petkov and his assistants N. Stojanov and B. Stefanov. An important element of their relation was the help he provided in illustrating the first edition of the *Flora na Bălgarija* (Stojanov & Stefanov 1924-1925). This contribution trained his talents of a morphologist, introduced him to the field of floristics, and would prove of great significance for his later work.

His first appointment as a young scientist was at the Experimental Agricultural Station in Sadovo. He also worked in Sofia at the Botanical Department of the Central Institute for Experimental Agriculture, where he met Velenovský's best collector, V. Střibrný, and worked under the guidance of T. Nikolov, a physiologist and embryologist, at the build-up of a herbarium.

In 1922 he was invited to serve as Petkov's assistant, to replace Stojanov who had been elected Associate Professor at the Agronomy Faculty. This was the start of Daki Jordanov's botanical career.

In 1926 he took part, at his own expense, in a post-graduate course at the Institute of Plant Physiology of Berlin University, where he worked under the supervision of Hans Knipp and studied the influence of drugs on the development of *Coprinus* species (Jordanov 1932).

The attempts of Petkov and N. Arnaudov, his seniors of the time, to turn him into a physiologist failed. The reason may have been his close relation to Stojanov and Stefanov and his acquaintance with the German phytogeographer L. Diels. It was Diels who aroused his interest in the lake and marshland flora. From that point onward, his career as a botanist would focus mainly on Bulgaria's lower and middle vegetation belts.

Gifted with brilliant memory, keen observation and strong curiosity, he proved an excellent florist and field scientist. The 1928-1944 period was his most productive. Studying the swamps at that time was a real feat (he had to resist malaria that made many victims among field biologists and scientists, and also leeches and the treacherous ground). He also studied the xerothermic grassland vegetation which he identified as steppe, making them the subject of a thesis; the flora and vegetation of Strandža and of the lower hills of Thrace; the flora of the Western Rhodopes, together with Stefanov; and the flora of Mount Olympus in Thessaly, together with Stojanov.

In fact, Daki Jordanov studied the regions of the country that were most strongly affected by human activities. Without his 30 works on the lowland, subalpine and alpine flora of the time we would not now be able to retrace the recent evolution and genesis of the country's floristic complexes, up to 1000-1500 m of altitude.

His work on the vegetation in the Bulgarian parts of the Strandža Mountain (Jordanov 1938-1939), being the result of seven years of careful study of the southern Euxinian flora and vegetation, is of special importance for botanists in Bulgaria and abroad. The working method of Jordanov, during that period and later on, consisted in collecting botanical facts and materials during his frequent visits of many regions of the country, working them out in parallel, then gradually concentrating on the phytogeographical analysis of some of them.

His studies provided the bases for large-scale phytogeographical survey of Bulgaria, by Stojanov (1941) and Stefanov (1943), and especially for a study on the "topogra-

phical flora of Bulgaria" (Stefanov & Jordanov 1931) which, on the basis of chorological data, provided the first phytogeographical subdivision of the country. This was to serve as the basis for the floristic regions recognized in the *Flora na Bălgarija* (Stojanov & Stefanov 1933). Despite the many, not always justified later modifications of that scheme by Stojanov and Kitanov, it remains the most faithful and suitable that exists for use in floristic and chorological work.

In a total of 50 floristic papers, Daki Jordanov recorded 11 plant genera *(Stratiotes, Imperata, Gaudinia, Aeluropus, Leontice, Caragana, Cressa, Stenactis, Aldrovanda,* and *Reichardia),* as well as 183 species and subspecies, as new to the country and cited more than 500 new locality records. One species *(Polygonum alpestre)* was new to the European flora and 14 for the Balkan flora,including *Lycopodium inundatum, Cyperus globosus, Ligularia sibirica,* and *Ribes nigrum.*

Leader and organizer

1944 marked the beginning of the second period in Daki Jordanov's life, when the consequences (both favourable and unfavourable) of his youthly political affinities came to bear. Much has been written on his important political activities and the privileged position in which they placed him (but not more prominent than the less "political" Stojanov or Stefanov). His high offices were not just a privilege, though: on the contrary, being a head of Sofia University for 12 years (1950-1962), first as Deputy Rector and since 1956 as Rector, his favourite terrain studies did suffer. He reverted to them in 1963 when, as Director of the Institute of Botany, he visited every Saturday either the Konjavska Planina, or the Trănski Mountains, or the Black Sea coast, collecting many plant specimens which, unfortunately, remained virtually unworked.

Coming from a very poor family and gifted with a tough and stubborn character, Daki Jordanov naturally took to the "left wing" among his classmates. Thirsty for knowledge, he mixed with these groups mainly because of his inborn rebelliousness against his richer yet not always talented classmates. At least in front of me and B. Kuzmanov, his close associates for many years, he disliked talking about that period, nor did he place much weight on the study of Marxist literature which had once brought him to prison, whence he was freed with the help of Tsar Boris III and thanks to the intercession of Ivan Bureš, Director of the Tsar's Natural History Institutes, and Stojanov.

After 1944 he was appointed Chairman of the so-called "Fatherland Front Committee" at the Faculty of Natural Sciences, with a mandate to evaluate the "anti-people" activities of professors. This evaluation at first resulted in the entire teaching staff being maintained, and even later in the field of natural sciences and mathematics just a single professor was expelled. Jordanov kept regretting the dismissal of that one scientist (the famous S. Konsulov), which he ascribed to the influence of the communist President of the Bulgarian Academy of Sciences of those days. When today we look at the dominant role of natural history in the Bulgarian Academy of Sciences we should trace it back to Daki Jordanov's role as President of the "September 9th 1944 Tribunal", when he saved for Bulgarian science and culture personalities of world-wide prominence: chemists, physicists, biologists, medical doctors, the teachers of two forthcoming generations of

researchers who laid the foundations of the Natural Science Institutes of the Academy. Most of Jordanov's later disciples were not active politically, since he did not place much weight on party membership when choosing his associates.

Educated in a completely different spirit, used to take science seriously, Daki Jordanov despite his left-wing convictions helped every young and talented person. During the years of oppression of Bulgarian biology, Daki Jordanov did not yield to the deceitful primitivity of Lisenko, Bošjan and Lepešinskaja, nor to the instigations of Holdein. Together with his colleagues at the Faculty of Biology he stood up for his scientific principles, and was indeed the main supporter of the anti-Lisenko spirit of the Faculty. At the Faculties of Agronomy and Forestry of the time, and later on at the Higher Agricultural Institute and the Higher Forestry Institute, it would have been unthinkable for a professor to support his students when they struggled against the Lisenko's yoke over Bulgarian biology.

His attitude was that of a man who shared the problems of the people amidst whom he lived but detested opportunists and party officials. In this he was more nearly a populist than a communist faithful to the party line, as was expected from persons in his position.

After September 9th, 1944, Daki Jordanov contributed essentially to the development of Bulgarian botanical science. He succeeded in protecting it against the greed of molecular biologists and against the opinion, promoted by them and some representatives of the technical sciences, that botany and zoology were of little use to socialist economy when compared to agrobiology and forestry. During that time, levelling and class hatred were enforced to such a degree that the species names like *Abies borisii-regis* and *Saxifraga ferdinandi-coburgi,* commemorating members of the royal family who had been prominent sponsors of Bulgarian botany, were banished from use, at least in popular publications.

Daki Jordanov was not only Director of the Institute of Botany with Botanical Garden, but headed for 10 years the Department of Botany of the University of Sofia, was Chairman of the Biology Section of the Union of Scientists, Chairman of the Bulgarian Botanical Society, Chairman of the Natural History Society, Editor-in-Chief of the journal *Priroda i znanie* and of the *Izvestija na Botaničeski Institut.* His opinion was highly respected, and it was quite natural for him to take the lead when Stojanov, due to his age, could no longer fulfil his role of principal editor of the *Flora na Narodna Republika Bălgarija,* a project started in 1960.

Flora na Narodna Republika Bălgarija (Jordanov 1963-) was to become his major achievement, the magnum opus of his lifetime and his most valuable contribution to Bulgarian botany. To Kuzmanov and myself it was obvious that Daki Jordanov was grateful to his fate for having had the privilege to lead the work on that Flora. Almost the whole research staff was committed to writing the treatments for the first three volumes. Typical of the style of that great Bulgarian scientist who was Jordanov, he was quite prepared to trust his young associates when they glanced at the style of large international Flora projects: *Flora malesiana, Flora europaea,* and later on *Flora of Turkey.* Of course, it proved at that time impossible to depart from the model of the *Flora SSSR,* which was followed so well that later Bobrov (1974) would point at the unpleasant similarity between the two Floras. Today we regret the lack of experience of those early

days, the inability to get rid of the strict adherence to the Engler system and of the absolute requirement of publishing the families in succession. However, as a great friend of Bulgarian botany (Walters, 1986) noted, *Flora N.R. Bălgarija* gradually adapted to the taxonomic style of *Flora europaea,* a work that already had some Bulgarian botanists among its authors. This tendency would never have materialized without the knowing consent, not to say active support, of Daki Jordanov.

Typical of his style of leadership, Daki Jordanov offered his assistance to all who embarked on experiencing new methods of investigation: biosystematics, variational statistics, population studies. To be more accurate, he did not stop anyone who wanted to do something new. As early as 1975, this led to devising a new structure for the Institute of Botany, including a strong laboratory of biosystematics and infrastructures for mathematical applications. Along with the traditional sections of plant taxonomy and geobotany, new sections for lower plants, useful plants, palaeobotany and palynology were formed. The whole new set-up of the Institute was inspired by sympathy for and trust in young students and research associates, which he employed at the Institute on a large scale. Having taken part in three international botanical congresses, he was familiar with the work at Europe's leading botany departments and was constantly seeking to improve the organizational structures for a better development of Bulgarian botanical science. In 1973, he helped open the gateways to international co-operation by convening a Symposium on the problems of Balkan flora and vegetation, at Varna, a meeting that generated many contacts and plans for further collaboration.

A typical feature of his was that, both at work and in everyday life, he easily tore down barriers imposed by age and by his high position in the administrative and scientific hierarchy. Quite probably he was the only scientist and university professor whom his students called by his first name, something that was normally out of the question at that time. He was no less respected for it, with a respect based both on his profound knowledge of the Bulgarian flora and on his readiness to help everybody in every respect. It was that very sympathy for people and his ensuing popularity that made him enemies at all levels of the scientific and political hierarchy in spite of his party affiliation. For he was a man of free spirit, whom even a party like his would not manage to change by either honours and medals or coercion and discipline.

The reason why I dwell at such length on Daki Jordanov's personality is the fact that it is thanks to him that Bulgarian botanical science as a whole managed to climb the steep slope imposed by national communism. He was the only among great Bulgarian scientists who left a school after him, modest as it may be. During the hard years he permitted and even encouraged contacts with foreign colleagues, he inspired our faith to overcome the obstacles that still lie ahead of us, like a succession of green volumes to be discovered by future generations of Bulgarian botanists. May they have the love and dedication to follow his example.

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