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Progress in compiling backbone taxonomy for vascular plants of Asian part of Russia

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In frame of the international project “Mapping Asia Plants” (MAP) we have started to compile the list of vascular plants for Asian Russia. As a start point we used the “Check-list of flora of the Asian part of Russia” (Baikov, 2012), where listed about 7000 species for the region. The Check-list was supplemented by compendia and Floras that content data from all 27 regions of the Asian Russia. All data was transferred to the Excel spreadsheet format. Taking into account that different sources for different taxonomic groups use various species concepts, we decided to apply for all taxa a monotypic species concept known in Russia as the V.L. Komarov concept. It means that all subspecies (sometimes also varieties, if the accepted ranks for taxon differ between sources) are treated as separated species. For practical usage, closely related and difficult to determine species are linked into aggregates (Manton, 1958). The applied approach allows us to save the taxonomy binominal (as it was introduced by K. Linnaeus) and to combine regional races in aggregates (species sensu lato) only for special purposes, e.g. analysis of geographical complexes. Currently, we have checked 89 % of the data set. To date, flora of Asian Russia includes 157 families (following PPG I, APG IV), 1146 genera (following the Catalogue of Life) and 8056 species. About 1000 species were added to the list following data from regional compendia. Preliminary, we have distinguished 752 aggregates comprising 1766 species (22 % of flora). When the list will be completed, we can create small scale distribution maps for all species included in the data set. To make the maps more detailed, we will use regional dividing applied in compendia and floras. The final check-list of vascular plants of Asian part of Russia can be published after consultations with regional experts in floristic diversity.
Several decades ago, the scale of geobotanical mapping was a more complex problem than today. The reason for this was that all maps were prepared manually on hard copies of topographic basis. The modern technologies significantly reduced the severity of this problem. The huge data sets on the plant distributions can be easily combined on map at any scale. The Khamar-Daban is a comparatively small ridge on the south of Baikal Siberia, but it’s a widely known area as an eastern outpost of South Siberian nemoral refugia complex. To understand the plant distribution patterns within the refugium we have performed large scale grid mapping of six relict plant species in the lower course of the Bolshoi Mamai River with adjacent parts of catchment areas of neighboring rivers. The grid size was 0.001°×0.001°, that equal to 111×70 m. In total, 3261 grids (25 km2) were screened. The results showed that nemoral relict species significantly differ in their altitudinal distribution, habitats and sensitivity to human impact. It corresponds to our analysis of distribution of 27 relict species in limits of the Khamar-Daban Ridge (Chepinoga et al., 2017), i.e. complex of species traditionally recognized as nemoral relicts includes plants of different ecology. The data collected in on the Khamar-Daban will be a part of more comprehensive project devoting to distribution of vascular plants in the Baikal Siberia. As a pilot project, we have digitalized 1284 grid maps from the “Flora of Central Siberia” (1979). Grid size in compendium (~28×36 km) is quite acceptable for small-scale mapping of species distribution. The collected data can be included in the project “Mapping Asia Plants” as a part of data set from Asian