

xerophyllous *T. scythica*. Further talks were also devoted to delimitation of species in diverse groups of plants. Drs. Julia Shner and Tatiana Ostroumova presented their work on species limits in the genus *Peucedanum* section *Peucedanum* (Apiaceae); Dr. Sergei Efimov and his co-authors from Moscow and Altai State Universities discussed the results of molecular and cytogenetic studies in the *Paeonia obovata* group; Dr. Maxim Nuraliev and his co-authors presented a talk on the evolution of the genus *Thismia* (Thismiaceae) in the light of morphological and molecular data. After a coffee break, four more talks were presented, among which two are worth special mention: one by Dr. Tatiana Kramina on molecular genetic identification of a *Silene* plant raised from a seed obtained from permafrost deposits of the late Pleistocene and Dr. Vladimir Gohman's talk on integrative taxonomy of parasitic Hymenoptera, the only zoological topic at this conference.

The afternoon session was devoted to the problems of identification and species delimitation among alien and invasive plants, exemplified by *Erigeron*, *Cuscuta*, and some other genera, followed by lectures on problems arising with species-level identification of some cultivated plants, including cultivated poplars (the talk by Dr. Marina Kostina and Natalia Vasilieva).

Abstracts of the ten talks, translated from Russian by Irina Kadis, are presented below.

Species complex of *Paeonia obovata* Maxim. (Paeoniaceae): five species or just one?

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A complex of herbaceous peonies akin to *Paeonia obovata* Maxim. is distributed in the forests of East Asia. These peonies differ from other groups by their biternate leaves that consist of nine broad obovate entire segments, solitary terminal flowers, and glabrous follicles. Diploid plants (2n=10) occur along with tetraploids (2n=20).

The number of species recognized by various authors (Shipchinskiy, 1937; Voroschilov, 1966; Stern, 1946; Kemularia-Nathadze, 1958; Makedonskaya, 1979; Uspenskaya, 1987; Hong *et al.*, 2001) ranges from five (*P. obovata*, *P. oreogeton* S.Moore, *P. japonica* (Makino) Miyabe & Takeda, *P. vernalis* Mandl., and *P. willmottiae* Stapf) to just one, with two subspecies (*P. obovata* subsp. *obovata* and *P. obovata* subsp. *willmottiae* (Stapf) D.Y.Hong & K.Y.Pan). All the species occur in Russia, except for *P. willmottiae*, a Chinese endemic. Due to high morphological variability and the presence of polyploid

forms, identification of species in this group presents substantial difficulties. Authors disagree in their understanding of the species volume, which creates additional problems.

Species of *P. obovata* group are characterized by a large number of polymorphisms in ITS sequences of nuclear rDNA, which include two types of nucleotides (Yefimov *et al.*, 2017). Three groups of samples were segregated in accordance with the observed number of polymorphisms: those with 11, 3, and 2 polymorphisms. The groups are discreet, no hybrids found so far. The third group differs from the other two not just by the number of polymorphisms, but also by their position in the ITS sequence. It is difficult to find correlations of the segregated groups with any morphological characters. We have only found some correlation with the geographic distribution. The group with the smallest number of polymorphisms includes samples from Sakhalin Island and the Maritime Province (District of Shkotovo).

The aim of this research was to determine if there is a correlation between the observed polymorphisms and ploidy. Using the flow cytometry method, we obtained data on the relative DNA content and genome size in 16 representatives of the *P. obovata* complex. Monoploid genome size ranged within 11.57–14.70 pg; among the sampled plants there were diploids along with tetraploids. There was a good correlation between the ploidy level and number of ITS polymorphisms.

The data obtained suggested that the species complex of *P. obovata* constitutes a very heterogeneous group as regards morphological and genetic characters. Apparently, the differences at the genome level are more distinct than the morphological differences. The observed polymorphisms may depict a contemporary diversification within the group.

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The problem of species diagnostics in invasive *Erigeron* sect. *Conyza*: hybridogeneous taxa or ecological forms?

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Within the Mediterranean Basin, all taxa of the genus *Erigeron* sect. *Conyza* are alien; in fact, *E. canadensis* L. has been included in the ten most aggressive invasive species in Europe in the databases DAISIE and GT IBMA. During 2017, we studied the morphological features and ecological niches of *E. canadensis*, *E. bonariensis* L., and *E. sumatrensis* Retz. in Italy, Spain, and Portugal. Some of the sampled plants could not be attributed, with any certainty, to a species based on analysis of their morphological characters (inflorescence shape, type of pubescence on shoots and leaves), as they