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Biodiversity. Ecology. Adaptation. Evolution.

dedicated to 100 anniversary
from birth of famous Ukrainian lichenologist
Maria Makarevych
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«BIODIVERSITY. ECOLOGY. ADAPTATION. EVOLUTION.»,**

**DEDICATED TO 100 ANNIVERSARY FROM BIRTH OF
FAMOUS UKRAINIAN LICHENOLOGIST MARIA MAKAREVYCH**

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high phenotypic plasticity have a growth advantage under heterogeneous conditions. Phenotypic plasticity can be exhibited in plant morphology. We have explored leaf-level plastic response to light of four *Acer* species grown in forest conditions such as shade-tolerant *A. platanoides* and sun-tolerant *A. campestre*, *A. tataricum*, *A. negundo*. Leaf phenotypic plasticity, assessed by plasticity index, was studied in 8 leaf morphological variables. All the morphological traits included in this study have shown plasticity under natural light conditions and the traits differed significantly in their plasticity across species. These traits could be ranked according to their plasticity as follows: petiole length, leaf area, fresh mass, dry mass, stomata density, specific leaf area, specific leaf mass, venation density. Values of plant trait plasticity also varied depending on the stage of plant ontogenesis (seedlings or young trees). As a rule, seedlings had higher plasticity in most traits than young trees of the same species, and their mean plasticity exceeded that in young trees. All traits showed significant differences in plasticity among species. The degree of species' plasticity was dependent on the leaf trait examined, and no one species was consistently the most or least flexible across the various traits. Ranking *Acer* species according to their mean plasticity (*A. platanoides*, *A. negundo*, *A. tataricum*, *A. campestre*) indicated that leaf morphology of *A. platanoides* was more flexible than that of other *Acer* species studied. However, despite significant interspecific variation in the plasticity of individual traits, species differed little overall in their mean plasticity. This was the result of each species having some traits that were more flexible than others. Different species achieved their overall plasticity in different ways. Evidence of different strategies of morphological plasticity across species was obtained on various traits. Thus, we discuss the extent to which contrasting plant species differ in their ability to acclimate their morphological traits to light conditions. We showed that highly plastic, shade-growing species exhibit greater light-mediated adjustments within leaves than their less plastic, sun-growing counterparts. Given that acclimation is developmentally dependent, an increased ability to alter leaf structure under contrasting light should also enable greater light acclimation of photosynthesis and respiration; this possibility will be discussed.

МОРФОЛОГІЧНА ПЛАСТИЧІНІСТЬ ЛИСТКІВ У РОСЛИН РОДУ *ACER* ПРИ РІЗНОМУ ОСВІТЛЕННІ

Ковтун Н.Ю., Сіднев Ю.П., Білявська Н.О.

Охарактеризовано головні морфологічні показники листків у представників роду *Acer*, що ростуть при різному освітленні в природних умовах. Порівнювалася пластичність цих характеристик в залежності від віку та рівня освітлення. Виявлено видоспецифічність у пристосуванні до світлових умов.

ECOLOGICAL AND GEOGRAPHICAL CHARACTERISTICS OF DIATOM ALGAE OF MICROPHYTOBENTHOS OF THE TILIGUL ESTUARY

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The original analysis of diatom algae flora of the Tiligul Estuary in relation to salinity of water has shown that its core is made of marine euryhaline species. Oligohalobes are represented in estuary by 66 species (36.4 %). This group includes halophiles (27.1 %) and indifferent (16.0 %). Indifferents (29 taxons or 16.0 %) yield a little to halophiles on number. The quantity of mesohalobes in the Tiligul Estuary has distinctly reduced now, the number of polyhalobe species on the average on reservoir has remained at a former level and the quantity of indifferent has increased.

The main core of taxons in relation to pollution is formed by mesosaprobies. The greatest quantity of species (54) was marked for β -mesosaprobe groups whereas only 20 α -mesosaprobies and 15 euryaprobies were found. One species *Stephanodiscus rotula*, which is met in oligo- β -mesosaprobe zone and is periodically met in fouling of macrophytes, is revealed. Two species from β - α -mesosaprobe zone - *Cyclotella meneghiniana* and *Anorthoneis hummii* are found out. It is revealed 6 oligosaprobies.

The value of an integrated saprobe index of the Tiligul Estuary waters (2,3) characterizes it as β -mesosaprobe reservoir. The analysis for 60 years has shown that the quantity of α -mesosaprobies has decreased only for 1 % and of β -mesosaprobies has increased for 1.8 %. The quantity of euryaprobies (from 10.7 to 8.3 %) has also decreased a little. Species with unknown saprobity have made 43.6 %.

In relation to pH alkaliphilic species has prevailed in the reservoir. They are represented with 149 taxons (82.3 %). The group of indifferent considerably concedes (16 taxones or 10.7 %) to alkaliphilic species.

In biogeographical aspect boreal phytogeographical group (67 taxons or 37.0 %) has taken up the leading position. The number of taxons of widespread group concedes to boreal (58 taxons or 32.0 %) and has decreased in 2.7 %, in comparison with 60-ies of XX century. In total the boreal element with subgroups in the Tiligul Estuary make 59.7 % or 108 species and intraspecific taxons. Among found algae there were 2 endemic species: *Amphora genkaii* and *Cocconeis kujalnitzkensis*.

ЭКОЛОГО-ГЕОГРАФИЧЕСКАЯ ХАРАКТЕРИСТИКА ДИАТОМОВЫХ ВОДОРΟΣЛЕЙ МИКРОФИТОБЕНТОСА ТИЛИГУЛЬСКОГО ЛИМАНА

Ковтун О.А.

На основании анализа видового состава диатомовых водорослей бентоса Тилигульского лимана за 1990-2005 гг. приводятся данные по современному экологическому состоянию водоема. Проведен сапробиологический анализ, а также по отношению к солёности и pH среды. Установлено, что за прошедшие 50 лет произошли незначительные изменения экологического спектра. Боральная фитогеографическая группа в водоеме составляет 108 таксонов или 59,7 %.

INVESTIGATION OF CHARACTERISTICS OF UREASE PREPARATIONS FROM SOYBEAN

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Studying urease is of interest from various positions. Urease meets beside many alive organisms. First of all, it plays the important role in circulation of nitrogen in natural conditions. From the practical point of view an opportunity of urease