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WINTER ACTIVITY OF SOIL MACROFAUNA FROM THE BLACK SEA COAST OF THE CAUCASUS

K.B. Gongalsky, F.A. Savin

Summary

Populations of large soil invertebrates were studied in Abrau Peninsula (Krasnodar Region) and in Abkhazia in winter 2001. Animal abundance in an oak-hornbeam forest in Abrau Peninsula was 163 ind. m² (ca. 15% of the summer one). Isopods, millipedes and insect larvae dominated among macrofauna. Animal abundance in beech, chestnut-oak and box-tree forests in Abkhazia was 366—475 ind. m². The same groups along with earthworms dominated. Trophic activity measured by bait-lamina test of the soil fauna in Abrau Peninsula was 2,7% (ca. 10% of the summer one), in Abkhazia — 18%. Physiologically active state of soil fauna in winter (especially mild ones like in Mediterranean ecosystems) may be one of the mechanisms of pollutants impact on the animals. Probably, a combined influence of low temperatures and toxic substances may lead to serious changes in populations of soil animals.

BUTTERFLIES OF THE NIZHNY NOVGOROD REGION (LEPIDOPTERA: RHOPALOCERA)

S.K. Korb

Summary

For the Nizhny Novgorod region 148 species of butterflies are listed, from which for 16 species the southern and northern area borders are made more accurate. Information about harm of some representatives of genera *Pieris* and *Artogeia* to cultivated plants of family *Crassulaceae* in the Nizhny Novgorod region are pointed.

LANDSCAPE DISTRIBUTION OF HOVER-FLIES (SYRPHIDAE, DIPTERA) OF EUROPEAN NORTH-EAST OF RUSSIA

S.V. Pestov, M.M. Dolgin

Summary

In article are given a data about species diversity and landscape distribution of hover-flies of North-East European Russia. There are 195 species in 55 genus on studied area. Analyses of distribution find out species that have borders of areas on North-East European Russia. 45 species of hover-flies distribute in total considered landscape zones. 24 species have been find only in middle taiga, 16 species only in forest-tundra zone.

THE MIDDLE SPOTTED WOODPECKER DENDROCOPOS MEDIUS IN MOSCOW REGION AND SPECIES RANGE EXPANSION

V.S. Friedmann

Summary

Breeding pairs of the Middle Spotted Woodpecker feeding young were recorded in 1994 for the first time in Moscow Region. Evidences of both increasing numbers of species breeding attempts in the south of Moscow Region and Moscow vicinity and population accretion in the neighboring Kaluga and Tula Regions are presented. Analysis of literature sources shows that the population growth and northward range expansion started in Moscow Region in mid 1990s. Same phenomena are known from Baltic countries, Saratov Region on the lower Volga River and some others areas. Key adaptations in natural history and behavior of the Middle Spotted Woodpecker responsible for the population changes are discussed.

TO MATTER ABOUT CLASSIFICATION OF GRASS LIFE FORMS.
II. INFLORESCENCE AND LIFE FORMS AGROSTIS L.
IN CONNECTION WITH SYSTEMATIC

E.I. Kurchenko

Summary

Inflorescence and life forms of 43 species *Agrostis* L. from Eurasia were investigated. These species attribute to 4 sections: *Vilfa*, *Agrostis*, *Brevipedicellati* and *Trichodium*. The variants of inflorescence construction on the following characters revealed: length of main axis, number of nodes, number of lateral branches, outline of inflorescence during flowering and others. 6 forms of the outlines inflorescence revealed. Classification of bents life forms created. It was based on both vegetative organs and inflorescence structure. 14 types of the life forms (habits) bent were described.

**THE STRUCTURE OF LEAF SURFACE OF ANNUAL SHOOTS
IN YOUNG TREES OF *BETULA PENDULA* AND *ALNUS INCANA***

L.S.Ermolova

Summary

When estimating the seasonal dynamics of young trees of *Betula pehdula* and *Alnus incana*, the relation of leaf area with the number, mass and length of growth shoots was studied. Three statistical models were used. The model $y = a + bx + ex^2$ was considered as the best. The relation between the surface area of shoots and their morphological features becomes closer in the course of counting the fallen leaves.

**EXPERIMENTAL STUDY OF MYCORRHIZA
AND MORPHOGENESIS DEPENDING ON PHOTOSYNTHESIS INTENSITY
IN *DACTYLORHIZA FUCHSII* (ORCHIDACEAE)**

I.V. Tatarenko, I.V. Varyvdina

Summary

Experimental study has been done to show effects of reduced and stopped photosynthesis on intensity of mycorrhiza and morphogenesis in *Dactylorhiza fuchsii*. Sixty plants were half-shaded and fully shaded at the beginning of growing season at 15 May, 2003. Per five samples collected at 5 and 16 June, 1 and 13 July, 15 and 29 August, 2003 along with control non-shaded plants to check the intensity of mycorrhizal infection in roots and thin extensions of tuberoids, and development of new tuberoids. We found that intensity of mycorrhiza does not depend on presence or absence of photosynthesis. Mycorrhiza had very similar patterns as in control as in experimental plants. It was decreased twice: right before flowering, and then during fruits ripening in control plants. Experimental plants did not set fruits and died 1/5 months earlier than control ones. Without photosynthesis those plants could not form normal new tuberoids, which appeared to be three times smaller, than in control. In experiment with cutting of above ground portion of the shoot plants transferred all nutrients from old tuberoids to new ones, which may develop normal shoot in the next growing season.

**INFLUENCE OF SPECIES COMPOSITION, STRUCTURE
AND PRODUCTIVITY OF PLANT COMMUNITION
ON THE MACROELEMENTS STORAGE IN TUNDRA ECOSYSTEMS
IN Khibiny Mountains (Murmansk Province)**

G.I. Ushakova, N.Yu. Shmakova, N.E. Koroleva

Summary

The paper deals with investigation of the influence of species composition and structure of mountain tundra plant communities (Khibiny Mts., Murmansk Province) on the storage and distribution of macroelements (C, N, Si, Fe, Al, Ca, Mg, K, Mn) in phytomass, litter and soil. Total amount of mineral elements and nitrogen in the phytomass of tundra plant communities varies from 14 to 62 g/m², in litter — 0,33-1,74 g/m², in the soil - 38,5-186,3 g/m². The litter amount and contents of elements in the litter depend from the litterfall amount and structure, ash contents, as well as from character and rate of the litter and litterfall destruction. Storage of elements in the soil is determined by productivity of the phytocoenose, amount of the litterfall, rate and character of litter and litterfall transformation. When the process of mineralization prevails, the carbon goes from the biogeocoenose, when the process of humification prevails, the carbon and elements are stored in the biogeocoenose.

Re-distribution of carbon and elements (Al, Fe, Ca) in the soil profile depends from the proportion between aboveground and belowground phytomass, as well as from ash contents in the litter, and the rate and character of destruction.

DISCOMYCETES OF FOREST-PARK BITZA (MOSCOW)

V.P. Prokhorov, D.I. Milekhin

Summary

That studies were carried out on forest-park Bitza which is located on south-west of Moscow city and some other localities within the city. In total 41 species of discomycetes was found. On dead plant rests 18 species belonging predominantly to genera *Hymenoscyphus* and *Lachnum* were collected. The group of xylophilous discomycetes was presented by 17 species. The species of genus *Mollisia* dominated. The fruit bodies of *Helvella* (*H. crispa*, *H. lacunosa*) were found only near the faculty of Biology MSU. Most species had very small apothecia probably height resistant to anthropogenous pressing and industrial contamination. The comparison of biodiversity of forest-park Bitza and reserve of Zvenigorod Biological Station demonstrated some common trends of discomycetes occurrence.

**NEOTYPUS OF MACULINEA ALCON *ALCONIDES* KORB, 1997
(LEPIDOPTERA, LYCAENIDAE)**

S.K. Korb

Summary

In present paper from the series of paratypes the neotype of *Maculinea alcon alconides* Korb, 1997, is established, because holotype of this taxon have been lost during depository transportation.

RELATIONSHIPS BETWEEN COMPONENTS OF PLUMAGE COLORATION IN THE PIED FLYCATCHER (*FICEDULA HYPOLEUCA*)

*K.M. Menchinsky*¹

Summary

The phenomenology of colour (melanisation) polymorphism in pied flycatcher is described rather complete but at the same time there was paid little attention to the ornamentation itself and its relationship with melanisation. Presented work is an attempt to fill this blank spot.

The size of ornaments (white forehead patch size, wing and tail ornamentation) was varied with Drostian color type, but not with age (two-way ANOVA). On the other side age has influenced the structure of coloration. Correlations of forehead patch size with other components of coloration become weaker with age. This trait becomes more independent from melanisation and wing ornamentation.

The tail spots are small and are significantly larger in dull males and females than in old black males. Tail ornamentation is under influence of other elements of coloration factors that are differently approached. It seems there is not substantial selective pressure upon this trait.

Correlation between two components of wing ornamentation and color type are most high and unaltered. Thus wing ornamentation can be regarded as an additional component of color polymorphism in the pied flycatcher.

SEX STRUCTURE OF NATIVE POPULATIONS OF *HIPPOPHAË RHAMNOIDES* L. IN UZBEKISTAN

H.K. Khaydarov

Summary

The sex structure of *H. rhamnoides* populations of flood-bed forests in valleys of Zerafshan, Surkhandarya and Kashkadarya rivers were investigated. In all studied *H. rhamnoides*, the male plants were in average 52—55% of total population. The male plants in comparison with female ones, earlier enter in vegetation, budding and flowering phases.