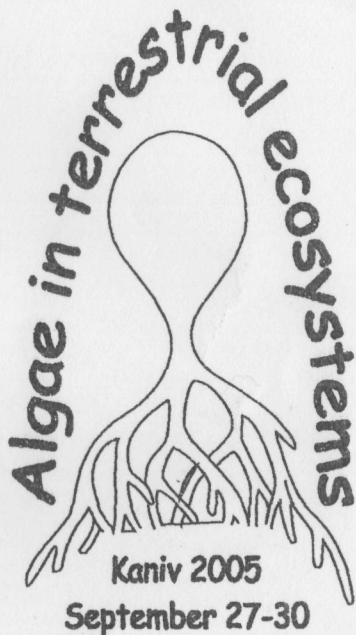


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**ALGAE  
IN TERRESTRIAL ECOSYSTEMS**  
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**Programme & Abstracts**

**Organized by:  
Taras Shevchenko Kyiv National University,  
Kaniv Nature Reserve**

**Dilabifilum-like alga (Chlorophyta) from the seaboard solonchak soils**<sup>1</sup>YAROVOI S.A., <sup>1</sup>KOSTIKOV I.Yu., <sup>2</sup>SOLONENKO A.N.<sup>1</sup>Taras Shevchenko National University, Kyiv Ukraine<sup>2</sup>Melitopol State Pedagogical University, Melitopol, Ukraine

A surface green algal growth, caused by free-living branched filamentous green alga resembling *Dilabifilum arthropyrenciae* (Vischer et Klement) Tschermak-Woess, is often present along the seaboard of Azov on the plump solonchak soils with the predominance of *Halocnemum strobilaceum* (Pall.) Bieb. This alga is common on the heavily salty soils with chloride-sulphate and chloride-sulphate-magnesium salinization type. These soils possess salt concentration of 77.2 – 2632.7 mg per 100g of soil and pH (6.7) – 7.8-8.6 – (8.8).

Two strains of this alga were isolated and investigated in unialgal culture. Cultures were studied during 3 years using agarized and liquid Bold Basal medium and Artari medium (with and without addition of 6% peptone) as well as on extracts from solonchak soils and in distilled water. Cultures were observed at the age from 1 to 120 days.

The main features of this alga were as follows. Thallus filamentous, consisting of prostrate and upright branched filaments. Sarcinoid and pseudoparenchymatic complexes absent. Cells cylindrical, up to 60 µm length and 3–12 µm width. Cell length increasing and cell width decreasing from centre to thallus periphery. Apical cells straight and long (*l/w* ratio up to 20), basal cells constricted and relatively short (*l/w* ratio up to 2–4). Each cell possessing a thin parietal chloroplast covering usually nearly 1/2 of the internal cell surface, with 1 – 2 (3) pyrenoids with a discontinuous starch sheath. With age, the chloroplast often occupies a terminal position inside the cell, and the alga obtains a *Diaphragma*-like morphology. In old cultures (more than 3 months), cells transform into green akinetes, and the thallus often becomes a unicellular coecoid stage. Reproduction is by fragmentation of the thallus into short filaments or single cells and by green akinetes. In old cultures the alga remains green.

Zoospores and aplanospores was never obtained despite using different media and techniques (including method of zoospore induction described by HIDA, NAKANO, IWATSEKI (1996) for *Dilabifilum arthropyrenciae*). The germination of coecoid cells and akinetes is lateral.

The specimens from Azov solonchak soils resemble *Dilabifilum arthropyrenciae* although are lacking zoospores. The presence of *Diaphragma*-like cells and the lateral germination of unicells and akinetes are the most prominent deviations from the description of *D. arthropyrenciae* as well as from azosporic members of *Dilabifilum* s.l. (*D. printzii* (Vischer) Tschermak-Woess, *D. incrustans* (Vischer) Tschermak-Woess, *D. prostratum* Broady & Ingerfeld).

**Soil cyanobacterial associations and soil forming process**<sup>1</sup>ZENOVA G.M., <sup>1</sup>OMAROVA E.O., <sup>2</sup>ORLEANSKIY V.K., <sup>3</sup>CHIZHIKOVA N.P.<sup>1</sup>Moscow Lomonosov State University, Moscow, Russia<sup>2</sup>PIN RAS, Moscow, Russia<sup>3</sup>Dockuchaev Soil Institute, Moscow, Russia

The soil is the result of interaction of the mineral phase with biological factor. The goal of this investigation was the experimental evidence of the modification in structure of clay caolin rock by an influence of cyanobacterial association which take place on destroying rocks. Natural association of *Oscillatoria terebriformis* with bacterial and actinomycetal concomitants was used for experiments.

Mineralogical composition of caolin was determined by rentgendifractometr XZC Carl Zeiss Yena (Germany) at 25 kv, 20 mA and at 30 kv, 25 mA. The transformation of caolin by cyanobacterial association was occurred. The intensity of reflexes triple 4.4524; 4.3544 and 4.1613 was reduced. Chlorite was transformed in the first place. The swelling phase in sphere approximately 19 %; makes one's appearance after solvation by ethylenglicol. It indicates the transition from chlorite to mix-layered formation with swelling package. It is considering that cyanobacterial communities could take part in soil forming processes.

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