stratigraphic succession includes both carbonate and siliciclastic deposits. The carbonate deposits with rudists (hippuritids) bioconstructions crop out in the base of the succession. The upper part is dominated by siliciclastic sequences that contain, at various levels, bioaccumulations mainly consisting of radiolitids. The rudist assemblages identified from these deposits include species typical for the Gosau facies, as well as distinctive species (*Miseia, Gorjanovicia, Mitrocaprina)* characterising south-European, Mediterranean areas. These latter species are now first mentioned for the Upper Cretaceous deposits in the area under study.

Influence of air temperature and CO_2 concentration on C3 plants

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Adaptation ability of C3 plants was verified with regard to the expected climate changes. The measurement of carbon dioxide exchange was carried out and net photosynthesis (PN) was calculated in C3 species of white goosefoot (*Chenopodium album* L., Chenopodiaceae). The tested plants were grown in plant growth chambers (Sanyo MLR 350) with controlled temperature (20°C), light length (14 hours day) and illuminance (20000 lx). While testing, the air temperature was increased stepwise from 5 to 40°C. Similarly, CO_2 concentration was changed in leaf cuvette from 200 – 1500 ppm by built-in removable CO_2 regulator. Considering the assumed climatic changes relating a raise of the air temperature and CO_2 concentration, the values of carbon dioxide concentration based on the climate scenarios ECHAM4 (Germany) and HadCM3 (G. Britain) were classified as well. Optimistic carbon dioxide emissions scenario B1 assumed the CO_2 concentration to be 467 ppm and pessimistic one A2 to 535 ppm.

The exchange of carbon dioxide was measured after the plant adaptation on certain temperature and CO_2 concentration in the light as well as under dark conditions. The adaptation to the given temperature and CO_2 concentration took approximately 45 minutes. Except for the carbon dioxide concentration and air temperature setting, in the clamp-on chamber the photosynthetically active radiation (PAR) value was programmed to automatically control light intensity at the level of 500 µmol m-2 s-1 being the optimum for C3 plants. Measurements were taken with the CIRAS2 (PPSystems, UK) supplied with universal leaf cuvette type U RICE having the measured leaf area of 1.7 cm^2.

The C3 plants examined are best adapted to temperature ranging from 20 to 25°C in light. Nevertheless, at high concentration of CO_2 the C3 plants have proven to cope better with higher temperatures than with low ones. At 5°C the calculated values of PN achieved approximately 4 µmol m-2 s-1 regardless the carbon dioxide concentration. Conversely, at 40°C the influence of CO_2 concentration was more significant. Therefore, we suppose that with increasing CO_2 concentration C3 plants are able to tolerate rise in temperature. Net photosynthesis rate at 1000 ppm CO_2 reached at least the value of 10 µmol m-2 s-1. When dark adapted, there is a better ability to cope with a higher CO_2 concentration at lower temperatures. In the dark the PN values were often negative, because the energy required for plant survival exceeds the energy amount obtained by photosynthesis.

Considering these facts, the climate changes will have significant influence on C3 plants. As a response to the rising CO_2 levels and air temperature, the rate of photosynthesis will increase and plants will accumulate more aboveground biomass. It can be assumed that climate changes will influence the competition ability of crops as well as weeds. Additionally, climate changes could influence the ecosystems composition and plant morphology.