

ADAPTIVE STRATEGIES OF SUPERIOR AQUATIC PLANTS

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LES STRATÉGIES ADAPTATIVES DES PLANTES AQUATIQUES SUPÉRIEURES. Le but de cette note est de présenter une partie des conditions de vie dans le milieu aquatique et de donner d'autres stratégies adaptatives des plantes supérieures dans cet environnement (du point de vue morphologique, anatomique, physiologique).

1. SOME ASPECTS CONCERNING THE LIFE CONDITIONS IN THE AQUATIC ENVIRONMENT

1.1. **Gas behaviour in aquatic environment.** Unlike the environment of terrestrial plants, the aquatic environment is characterized by a smaller quantity and a different chemical composition of the air. In water, the quantity of dissolved air, in the most fortunate case, may be of 20-25 cm³/liter, while the overground parts of terrestrial plants have more air at their disposal, and only an insignificant part is occupied by water gas in one liter. Among air components, the oxygen has the minimum quantity (maximum 6-8 cm³ / liter of water; or, it is a well-known fact, the 0.3-0.5 cm³ / liter represents the inferior limit of aerobe life).

Water receives oxygen from the air at the surface, but it also results from the photosynthesis of aquatic plants. During the water “blooming” process, as a result of the massive multiplication of microscopic algae in the phytoplankton, the air may completely disappear from the water; an equally important part is played by the brush of the filamentous macroscopic algae, or by the one of superior aquatic plants.

The nitrogen is completely absorbed from the atmosphere at the surface, but it is also generated by the denitrification of nitrogen compounds from sediments, in case of oxygen insufficiency.

The water-dissolved carbon dioxide results from the respiration of all aquatic organisms, from the decomposition of their body, but is absorbed from the atmosphere too. As far as the other gases are concerned, water may include sulphurate hydrogen (in