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Crystal structure of plastocyanin *a* from poplar

The protein Plastocyanin (PC) is an element of the photosynthetic electron transport chain of the higher plants and some algae. It is discovered during 1960 by Sakae Katoh (Japan). In 1987 we isolated Plastocyanin from poplar (*Populus Nigra, var. Italica*) and showed that it represents a 1:1 mixture of two structure iso-forms, designated as PC*a* and PC*b*. Comparing their amino acid sequences we have concluded that PC*a* is the well-known on structure and function bio-polymer. The physical-chemical characterization of PC*b* is

ferent plant families and have determined the amino acid sequences of PC*a* and PC*b* from parsley and tobacco. In the case of tobacco it has been registered twin dimorphism. The last result is a matter of principle having in mind that tobacco (*Nicotiana tabacum*) is an amphidiploid plant which has arisen by hybridization of both *N. sylvestris* and *N. tomentosiformis* with doubling of the chro-

Plastocyanin *b* – One New Component of the Photosynthetic Chain in Higher Plants

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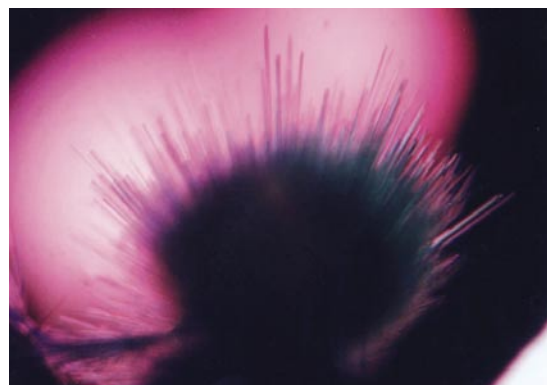
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our original contribution to the plant science.

Subsequently we have established similar Plastocyanin dimorphism in species belonging to different plant families and have deter-

mosome number and shows that combination of the ancestral genetic material results in reproduction of the PC-dimorphism property.

The analyzed by us 7 Plastocyanin primary structures are acknowledged in ATLAS of PROTEIN and



Crystal structure of plastocyanin *b* from poplar

GENOMIC SEQUENCES.

Our consideration for PC-dimorphism as being widespread in the higher plants photosynthesis has been recently supported by results of the Arabidopsis thaliana genome sequence project completed by the end of 2000 that started a new era in the plant research.