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REPORT

Photosynthesis at the 10th FESPP Congress in Florence

Z. ŠESTÁK

Institute of Experimental Botany, Academy of Sciences of the Czech Republic, Na Karlovce 1a, CZ-160 00 Praha 6, Czech Republic

The biannual congresses organised by the Federation of European Societies of Plant Physiology (FESPP) offer regular meetings of young and experienced scientists working in all fields of plant physiology. Nevertheless, it is difficult to decide what does the term plant physiology mean at present. I am far from being a classical plant physiologist who does not sanction the use of methods of biochemistry, biophysics, and molecular biology in studies of plant life. I feel that the above mentioned sciences should not be separated. But the number of participants and presented contributions increases from one FESPP congress to another which is evident from the increasing number of parallel sessions. How to solve the situation? One solution may be that contributions the final goal of which is not life of a plant (and also those that do not deal with plants but, for example, with photosynthetic bacteria) and its organs are not presented at future FESPP congresses.

According to my opinion and opinion of many colleagues (I always try to write the report more like a journalist collecting information from many sources than as a private person), many papers at the 10th Congress did not fulfill the above mentioned limit. May be the basic mistake was already in its motto: "From Molecular Mechanisms to the Plant: an Integrated Approach" - in Florence there were too many molecular mechanisms, fewer plants, and only few integrated approaches (one of the most integrated approaches is certainly plant production). Of course, a limitation of the scope would also limit the number of participants and of presented papers. In Florence, there were usually four parallel sessions, and the organisers unfortunately succeeded in arranging them so that it was very difficult to hear all one wanted to hear.

The scientific committee probably did not like the word "photosynthesis" and thus no session was presented under this title. The plenary lecture on a photosynthesis topic by P. Joliot "Structure and function of cytochrome *f*-b_6 complex of the photosynthetic electron transport chain" was presented in the abstracts without the word photosynthesis. Joliot presented a new model of the Q-cycle, and introduced also some evolutionary problems (was *Heliobacterium* a predecessor of cyanobacteria?). Generally, there were four sessions dealing with photosynthesis. Their sizes can be guessed from the amount of abstracts published in Special Issue of the 1996 volume of the journal Plant Physiology and Biochemistry (the abstracts have an unusual form of an extremely brief paper, because their content is divided into paragraphs with subtitles as in original articles, with a list of references, and

sometimes even with a table or a figure). The amount of oral presentations that were selected by the chairpersons was mostly 9 or 10. The remaining abstracts should have been presented as posters (but not all of them were really on display).

Session S7 "Light harvesting, energy transfer and primary reactions" was represented by 28 papers. Their topics were pigment-protein complexes, their properties and energetic, activities of electron transport chain and both photosystems, including changes in their heterogeneity, subunits and cytochrome complexes, photoinhibition and violaxanthin cycle, changes induced by mutagenesis, in transformants and under stresses, and exceptionally also methodical studies (new chlorophyll fluorescence method for detecting chilling sensitivity). Section S8 "Energy transfer and energy transduction" included 25 papers. The topics were similar to those in session S7, in addition phosphorylation of membrane proteins, oxidative burst, activities of quinones, effects of inhibitors and uncouplers like fusicoccin, -SH group reagents, rotenone, *etc.* were discussed. Exceptionally also experiments with photosynthetic bacteria were presented (2 abstracts), and a paper on carbonic anhydrase.

Unfortunately, session S8 ran in parallel with session S9 "Plastid and organelle development" (28 abstracts). Here the biogenesis of chloroplasts in algae and higher plants, and their eventual transformation into chromoplasts, senescence changes, formation of individual thylakoid components and structures, their conditioning by genes and physiologically active substances, formation of plastids in reproductive cells, chlorophyll biosynthesis and formation of pigment-protein complexes, *etc.* were presented.

Session S10 "Carbon metabolism" was represented by 63 abstracts, a half of which were connected with photosynthesis. They dealt with all types of carbon fixation pathway in various plant species including algae and cyanobacteria, the respective enzymes and products, regulatory mechanisms and stress effects, changes in individual assimilates, saccharides, *etc.*

In addition to the specialised sessions, photosynthesis papers were presented also in other sessions, mainly in those on yield potential and various stresses. Thus in session S17 "Yield potential" half of the 35 abstracts dealt with photosynthetic characteristics (pigment contents, chlorophyll fluorescence, CO_2 diffusion and uptake, photosynthate production and export, carbon isotope discrimination, photoautotrophy and photomixotrophy, *etc.*). Only about one third of the papers dealt strictly with plant yields. Session S18 "Adaptation to abiotic stresses" embracing 160 (!) papers contained about 25 papers with photosynthetic topics such as photoinhibition, photosynthesis limited by water and flooding stress, salt stress, oxidative stress, stress effects of mineral elements, temperature and ozone determined as changes in gas exchange, xanthophyll cycle, thylakoid substance composition, chlorophyll fluorescence kinetics, *etc.* Numerous photosynthesis papers were also in the session S20 "Herbicides, environment and plant interactions": herbicides affect individual reaction of photosynthetic electron transfer, and thus the methods determining Hill reaction, chlorophyll fluorescence induction, and carotenoid metabolism were often used.

The Congress was organised by two committees, organising and scientific, composed of Italian colleagues, and headed by A. Alpi and R. Gabrielli. The members of committees certainly tried to run the meeting without hitches. The Congress took place in splendid rooms of the Palazzo dei Congressi and the Palazzo degli Affari, both situated near the main railway station S.M. Novella, and thus a few minutes walk from the historical centre of Florence. Photosynthesis researchers mostly took part also in an evening lecture of R. Bassi on the protein regulation of photosynthesis: the lecture was fine, but unfortunately it was read in a large room in Via S. Reparata 93, the architect of which should be chastised: such an impossible space recalling a gymnastics hall, with a terrible acoustics is certainly rare in the whole world. On the contrary, the magic space of Santa Croce church, with its frescoes by Giotto and tombs of many well-known persons, were the proper environs for a beautiful organ evening concert for congress participants. Light lunches and the Farewell Cocktail were served in the Palazzo. They satiated everybody, but unfortunately their composition was not very inventive (often various sandwiches), and they certainly did not represent the well-known Italian kitchen. I did like ravioli that was served on Monday, but I had to ask an Italian colleague to learn what I ate. Wines were O.K. Because the Congress took place in Florence, a town with fantastic amount of monuments of art, it was not necessary to organise a general congress excursion (the tours offered by the agency were fairly expensive, and I did not find anyone who participated).

As a poor man from a post-Communist country, I asked for a category D "shared accommodation". According to the organising ENIC/GO/ROUND, Congress and Travel Professionals, for 25 000 to 40 000 Lit. per night there should have been 4 or 8 persons per room. I paid 30 000 Lit., and slept in a room with 24 bunk beds; as I learned in this youth hostel "Santa Monaca", the real price was 20 000 Lit., hence the professionality of the organising company was probably in getting without work a 50 % profit. All prices should include breakfast, but no breakfast was served in Santa Monaca. In case ENIC/GO/ROUND would now find its profit inadequate (for 8 nights I paid 240 000 Lit.), they can send me as a replacement some books: I like Pisa, the works of della Robbia family, and Italy in general (please, with texts in English or German). Happily enough, the Santa Monaca hostel is in a historical building (probably a former place for pilgrims), and my hobby is history, the personnel was friendly, the rooms clean, and the mostly young guests (only a few of them were participants at the Congress) were silent (with the exception of a group of old and partly drunken Italians that stayed in another room for one night only).

Those who participated at the FESPP General Meeting heard, in addition to the treasurer's report, an address of the Secretary General, H. Lambers. Its content was not very stimulating: many of the *ca.* 3100 members do not pay fees (thus why do I?), there is not enough money for the fund supporting young East European plant physiologists (why then to produce the FESPP Newsletter in such an expensive form?), it is impossible to launch an amalgamated European Journal of Plant Physiology, *etc.* About a third of his address was devoted to warning against publishing efforts of an Indian editor, Mr. S.G. Pandalei (at the 9th FESPP Congress in Brno a similar warning occupied about half of the H. Lambers' address). I found

that numerous participants felt that the FESPP Executive Council should have changed the place of the future 11th FESPP Congress. It will take place in Varna, Bulgaria. We feel sorry for Bulgaria and our Bulgarian colleagues that their political and especially economical situation is fairly bad. Nevertheless, organising a congress under such situation does not ensure its success. First, the planned registration fee is high, 400 US$ even if paid in advance, which is more than in Florence (450 000 Lit. was *ca.* 290 US$). The main organiser, E. Karanov, objects that hotel prices in Varna are lower than those in Florence, but the differences are not very large, and these two towns are incomparable. In Florence one pays for being in a fabulous town where one needs at least a week to visit all monuments and museums, not to speak of towns in the vicinity, like Fiesole, Pisa, Pistoia, Prato, Siena, *etc.* I visited Varna twice, and I guess that all Varna monuments can be seen during one day. For the majority of European participants also the travel costs to Varna will be fairly high. The bad economic situation of Bulgaria has been known during many months preceding the Florence Congress, and thus another country could have been found for 1998 (Greece, Poland?). The Varna Congress could easily have been shifted to the year 2000. According to the FESPP decision, the 12th Congress in 2000 will be organised in Budapest; let us hope in the meantime Hungary will not fall into economical troubles. Summing up, the activity of the Executive Council of FESPP can hardly be approved. The FESPP Award Lectures were presented by two authors, one from Belgium and one from France. I liked the lecture of H. Asard on plasma-membrane *b*-type cytochromes.

May be that due to the pleasant atmosphere of Florence I liked the 10th Congress very much. But being a Czech citizen, I was also proud that many foreign colleagues told me that the previous Congress in Brno was better from the point of view of organisation, meals, and scientific results presented. Of course, the green bag presented in Florence was liked by every participant. Nevertheless, I leave the decision to our readers.