



PROF. DR. PÁL GREGUSS IS EIGHTY YEARS

It is a general opinion that a man reaches the maximum of his ability at about the age of forty. Then the productivity persists for a longer or shorter time but decline is, unfortunately, a biological law.

Professor GREGUSS' s career is considerably differring from that. He made his mark as a scientist even in his youth. We should think, for instance, on the laying the foundation of his triphyletic theory of development in 1917, *i. e.* more than fifty years ago; and the peak of his activity falls beyond the fiftieth year of his life. In that time he found in the domain of xylogamy the field of research that has corresponded

the most to his individuality, his good observing power, excellent memory, technical ability, great working capacity and diligence. By studying and cultivating that field of science he has become a botanist known and recognized on a world scale.

In 1947, that is to say in his 58th year of life was published his first great work in this field, treating of the comparative histology of the trees and shrubs in Central Europe. His monograph about xylotomy of the *Conifers* living today was published by the Publishing House of the Hungarian Academy of Sciences in his 66th year of age. In 1959, 1967, and 1969 were published the other volumes of that series in which he was dealing partly with the xylotomy of *Cycas*, partly with the comparative and monographic elaboration of plant fossils. He was close to eighty as the manuscripts of volume 6 of this xylotomic series dealing with the living and fossil arborescent plants was finished and given to the Publishing House of the Academy of Sciences for being published. It is there in preparation at present.

This monumental work, unparalleled even on a world scale, has not only required the preparation and careful analysis of many thousand dissections but it was very difficult to get the material, as well. Every obstacle was, however, surmounted by the devotion to science that has always been characteristic of Professor GREGUSS who is, even at the age of eighty still in the full vigour of his spiritual and physical powers.

Professor GREGUSS was born in Torna (31. December 1889) in the county Csánád. As a son of a simple village joiner, he early got in touch with nature. This vicinity of nature may have had a role in making him love the "scientia amabilis". He was educated in a grammar school a teachers training-school and college, in Arad and the University in Budapest. After graduating he has functioned in every form of education from primary or grade schools up to the chair of University. His masters were JÁNOS WAGNER, resp. GUSZTÁV MOESZ in the teachers training school, resp. college. Apart from the influence of the renowned botanists, there cannot be neglected the time, either, he spent in Prague with the world-famed botanist, Professor PASCHER.

His educational activity began at a teachers' training-school in Csáktornya, later he got to the Teachers' Training College in Budapest. He obtained his doctor's degree in the time of the Hungarian Soviet Republic (1919), later becoming assistant first at the Training College of the higher elementary school teachers and then at the University in Budapest. After the initial difficulties, his way of life was from that time on in the ascendant. In 1927 he was commissioned to organize and head the Botanical Institute of the University in Debrecen and in 1928 he became professor and head of the Botanical Institute at the Training College of the Higher Elementary School Teachers in Szeged. There he taught and educated till 1940, then he was appointed the Head of the Botanical Institute and Director of the Botanical Gardens of our University. He conducted the Institute and the Botanical Gardens for 25 years till retiring as professor emeritus in the age of 76. His retiring does, however, not mean any break in his creative work; since then, too, he has got on with working, creating and educating according to his earlier rhythm of life.

Professor GREGUSS served for 102 semesters the higher education. Being retired, he is still going on with delivering special lectures at the University. During his functioning as professor for more than half a century — and he is with reason proud of that — he never omitted even a single lecture through a fault of his, showing by that not only his conscientiousness and healthy organism but also his respect for the instructive and educational work and the affection for youth.

His instructive-educational activity is of a great many aspects. A great number of educational papers and handbooks have propagated the biological instruction on the basis of experiments and of observing the living matter. The idea of the so-called school of work in the biological instruction was created by his activity in this country. This method of lecturing on the basis of the students' activity was introduced by him into the higher education, as well, and his book about 400 simple plant-physiological experiments was written for promoting that purpose.

In writing and action, he has contributed considerably to popularizing biology. He wrote his book about The wonderful life of plants, delivering several popularizing lectures in extramural courses, factories, youth communities. And his college and university lecture notes have ensured for the students the possibility of preparing more perfectly. He has always prepared conscientiously for his lectures, explaining his topics clearly, with impassioned eloquence, with a heat of love for his subject-matter. The living plants have never been missing from his teacher's desk, as well as the visual figures from the wall of his lecture-room, and the expressive, exact and simple but also aesthetically nice explanatory drawings from the blackboard.

It has often been said that teaching is a thankless task as the invested energy is often not in proportion with the result. There is proved just the very opposite by the instructive-educational activity of Professor GREGUSS. He may be proud of a very great number of students having worked very efficiently. He is often seen by his thankful students, even by those having visited his lectures fifty years ago. The results of GREGUSS's school are proved, among others, by the four Academic Doctors of biological sciences, more than ten candidates, several University Doctors of science, as well as a great number of University and college professors, lectures or investigators.

Professor GREGUSS's organisational work is worth mentioning, as well. Here we have to emphasize mainly the Botanical Gardens of the University in Szeged that, after Liberation, had to be re-created, starting nearly with nothing, as a result of the ravages of war. His organizing activity and unselfish generosity meaning often even material support were necessary for rising the Botanical Gardens in Szeged on a European level serving both scientific education and the general propagation of popular science on a high level. Coming to the scientific results of Professor GREGUSS, we should like to emphasize first of all that his scientific activity had begun in his very youth. He was learning in a middle school as his written reports about his botanical collecting journeys were published in papers for the young, school reports. He was early interested in the theories of evolution, in DARWIN's doctrines. By studying the problems of the theory of evolution, the young PÁL GREGUSS was led in two directions. One of the directions was genetics in which he has got new results mainly as to the research of sex inheritance. This activity of his came to a conclusion as early as in 1935, by writing his book Introduction to genetics that was the first original work of that character in Hungary.

The other direction conducted him to the investigation of the evolutionary history of flora. As mentioned above, he wrote, still in 1917, his monograph about the polyphyletic development of flora. Then a systematic research work followed for several decades as a result of which in 1955 he treated of the phylogeny of *Gymnosperms* already in the spirit of his so-called triphyletic system. In 1965, he explains in an original publication his theory concerning the triphyletic development of the land-flora.

The idea of polyphyletic phylogenesis is not new in phylogenetics. Professor GREGUSS's great merit is to have synthesized these detail theories into a homogeneous triphyletic theory. The fundamental idea of his theory is the conservatism of branching conditions, concretely that of the monopodial, dichotomic, and verticillate branchings that can be found in every evolutionary level from mosses till *Angiospermae*. The three parallelly developed lines of the vegetable kingdom that hasn't any collateral connections are formed by taxons of different development but identical branching.

The triphyletic theory of Professor GREGUSS was taken with enthusiasm by many investigators. Like any original idea, however, this had some antagonists, as well. But that opposition has, of course, not discouraged Professor GREGUSS, and this genuine scientist does not omit any opportunity, even to-day, to discuss the results of his morphological, histological, palaeobotanical investigations from the point of view of his triphyletic theory.

The most extensive part of his activity that was received favourably by all falls in the domain of xylotomy. Inside that the most complete part is the histological elaboration of the early and late wood of the living *Gymnosperms*. PÁL GREGUSS even after 50 years of age had enough energy for the enormous organizing activity with which he could lay up a supply of material needed for his investigation from every part of the world, mostly from their original habitat. The collection of high value, unparalleled the world over, a proper pride of Professor GREGUSS, is composed — apart from the six bulky books — besides the *Gymnosperms* of the trunk-remains of every European deciduous tree and shrub and of several others originating from other continents and of the sections prepared of those. In 1970, he finished his work "Identification of living *Gymnosperms* on the basis of their xylotomy", published in English language, completing in that way the xylotomy of nearly all the conifers living on the Earth at present (505), presenting the palaeontologists an indispensable Manual for determining their plant fossils.

In the meantime, he has written several popular and scientific monographs, university lectures, etc. The number of his papers, published in print or mimeographed, is approximating 300, about 30 of them being original scientific books and monographs 35 text-books for various types of middle-schools, compendia for university lectures, resp. university and college lecture notes.

This scientific and educational activity of so many aspects has obtained respect and recognition from the national administration, as well. After Liberation, he was elected as honorary member by the Society of Natural Sciences. In 1955 and 1959, and on the third occasion in 1965, he was honoured by our Government with the Gold Medal of the Order of Labour, and in 1958 with the silver degree of the KOSSTHU prize. From 1947 till 1950, he was Dean for one year and ex-Dean for two years of the Faculty of Natural Sciences of the University in Szeged, and in the academic year 1957/1958 he functioned as Rector of the University. In 1954, he was honoured by the French Botanical Society with a commemorative medal on the occasion of its centenary. In 1956, he was qualified Academic Doctor of biological sciences. He was honoured with golden diplomas, in 1960 as qualified school-teacher and in 1965 as certified teacher for the upper forms of schools by the Teachers' Training College, in 1966 as a teacher qualified for the middle-school education by the University Loránd Eötvös in Budapest and as qualified sport teacher by the Training College for Sports-Masters. He was elected as honorary member by the Palaeontological Society of India in December of 1964, by the Hungarian Biological Society, the Botanical Society, and by the Social and General Educational Society in 1970.

By the University in Szeged he was honoured with the commemorative medal Attila József. Meanwhile, he has been invited by the Polish Academy of Sciences, as well as by the Universities in Greifswald, Münster, Rostock, Kolozsvár, Bucuresti, Sofia, Lucknow, Bombay, Delhi in India, by the Teachers' Training College in Postdam, and by the International Botanical Congresses in Paris, Montreal, Edinburgh, Seattle to deliver addresses and lectures, and to be the Chairman of a Section. All these were performed. For acknowledging his scientific activity, he was elected as member by the International Dendrological Society, the International Taxonomical Society, the International Palaeontological Society, the International Society of Wood-Anatomists, the International Plant morphological Society, the German Botanical Society. Even at present, he is keeping up very extensive scientific connections with scientists, nearly 600 investigators and researchers in the most various countries of the world. Several living and fossil plants have been nominated by scientists at home and abroad, paying homage to him.

In addition to Professor GREGUSS's scientific activity, it is to be taken into consideration, too, that during his educational functioning lasting almost five decades long, he organized the Botanical Institute of the University in Szeged, for a quarter of a century he reconstructed the Botanical Gardens of the University in Szeged, developing it to have a world-wide renown. And in the meantime, he educated hundreds of the teachers of biology, among them 5 college and 6 University professors, foreign scientific researchers, postgraduate students doing research work for a higher degree, senior lecturers, etc., who will remember his scientific and educational endeavours, teaching in elementary schools, various kinds of middle schools, modern technical schools or getting on with their scientific research work in scientific institutions abroad, as well.

He had study-tours in almost all the Eastern and Western countries of Europe. Outside Europe he was in Egypt, Tunisia, Algeria, Morocco, Canada, India, the Caucasus, partly teaching, partly obtaining rich scientific experiences everywhere for his scientific and educational work. His scientific papers and monographs have been published, apart from Hungarian editions, in the periodicals of several countries, too, thus in the Soviet Union, the German Democratic Republic, the German Federal Republic, Belgium, France, Poland, United Kingdom, Canada, and Bulgaria. His works have been discussed in details, sometimes on many pages, in every country of Europe, and even in America, Asia, Africa, and Australia.

Paying homage in the *Acta Biologica Szegediensis*, as well, to PÁL GREGUSS, getting on with his creative work even as octogenarian, we wish him good health and mental alertness for being able to work among us still for long years, realizing all his several plans that have animated him to do his valuable creative work.

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In December of 1969, the Botanical Institute of the Attila József University, Szeged, displayed the scientific and educational activity of Professor DR. PÁL GREGUSS in an exhibition arranged in honour of his eightieth birthday.

Major original works of Prof. DR. PÁL GREGUSS.

1. Ein Gedanke zur polyphyletischen Entwicklung der Pflanzwelt. (Beihefte z. Bot. Centralblatt p. 229—269. Mit Tafeln II. u. II. Dresden, 1918.

2. Állatbiológiai megfigyelések és állatbonctani gyakorlatok (Animalbiological observations and animal-anatomical practices). 52 plates with drawings, p. 64. Budapest.

3. A természet egysége (Unity of Nature). Pp. 1—68. With 19 drawings. Budapest, 1925.
4. Sommerflora des Székesfehérvári—Gebirges, pp. 1—17. Debrecen, 1930.
5. A növények csodálatos élete (The wonderful life of plants), pp. 536. With 428 drawings mostly original. Budapest, 1932.
6. Bevezetés az örökléstanba (Introduction to genetics). Figs. 98, pp. 220. Budapest, 1935.
7. 400 simple experiments in plant physiology. Figs. 263, pp. 146. Szeged, 1936.
8. Az őthalmi mammut lelet pollenanalitikai vizsgálata (Pollenanalytical investigation of the mammoth find at Óthalom). 153 photographs and 163 drawings on 1—8 plates. pp. 1—16. Szeged, 1940.
9. A középeurópai harasztok spórái. 9 táblán 113 rajzzal. Die Sporen der mitteleuropäischen Pteridophyten. I—IX. Tafeln mit 113 Figuren, Budapest, 1941.
10. Bestimmung der mitteleuropäischen Laubhölzer und Sträucher auf xylotomischer Grundlage. Mit 1000 orig. Mikrophotographien und 250 Tafeln mit original Zeichnungen. Sopron, 1947. The identification of Central-European Dicotyledonous Trees and Shrubs Based on Xylotomy, with 1000 microphotos and 250 plates of original drawings. Sopron, 1947.
11. Xylotomischer Bestimmungsschlüssel der *Pinus* Arten. (Botanisches Institut der Univ. collaborator: I. Varga) pp. 1—138, fig. 68, 95 photos. Szeged, 1950.
12. Xylotomische Bestimmung der heute lebenden *Gymnospermen*. Mit 1500 Orig. — Mikrophot. und Zeichnungen auf 360 Tafeln, 8 Tab. Budapest 1955.
13. Identification of living *Gymnosperms* on the basis of xylotomy. With 1500 orig. phot. and drawings on 360 pl. Budapest 1955.
14. Holzanatomie der europäischen Laubhölzer und Sträucher. Mit 1257 Orig.-Mikrophot. und Originalzeichnungen auf 307 Taf. 6 Tab. pp. 1—330. Budapest 1959.
15. Определитель древесины голосеменных по микроскопическим признакам (Пер. В. Р. Филина и О. Н. Чистяковой.) Рис. 1—86, стр. 1—157. Москва 1963.
16. A szárazföldi növényvilág három irányú (trifilektikus) fejlődéstörténete. The phylogeny of sexuality and triphyletic evolution of the landplants. — Acta Biol. Szeged 10, 1—51, 1964.
17. Fossil *Gymnosperm*-Woods in Hungary from the Permian to the Pliocene. 136 Pages, 14 maps, 670 orig. microphot. on 87 tabl. Budapest 1967.
18. Xylotomy of the living *Cycads* with a description of their leaves and epidermis. 950 microphot. and 79 drawings on 185 plates 80 fig. Budapest 1968.
19. Tertiary *Angiosperm*-Woods in Hungary. pp. 1—151, 90 tabl. 750 photos. Budapest 1968.
20. Einführung in die Paläoxylotomie; Untersuchungsmethoden der fossilen Hölzer. 18 Tafeln mit 230 Photos. Geologie, Berlin 1968.

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