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ÅKE GUSTAFSSON
60 Years on April 8, 1968

Like a painter, a scientist may choose a conventional or a visionary motif. His message may be given in colourful broad strokes of the brush or by fine and exact streaks. Irrespective of being an artist or a researcher, the temperament is revealed already at the beginning, but experience and skill will generally allow the personality and the specific ingenuity better to be exposed.

Those who know ÅKE GUSTAFSSON either directly or through his publications have no difficulties to classify his type according to the above grouping. Now afterwards it seems almost natural that he as young botanist should plunge into one of the more intrigueing problems of that time, the mechanisms behind the apomictic reproduction system. It must have appealed to dreams and intentions already built up by his father's support during boyhood. They made him to study botany with the intensity of a fascinated observer of nature and made him an excellent florist. But the mysterium of apomixis must have appealed even more to those visionary ideas that were brought to him as young student by his professors BENGT LIDFORSS and HERMAN NILSSON-EHLE. The concepts of genetics with their dynamic approach to life must immediately have captured GUSTAFSSON's poetic mind, for which the sense in an abnormal system for reproduction must have been a real challenge.

He paints his apomictic motifs in *Taraxacum*, *Hieracium*, *Rosa*, *Potentilla*, and *Rubus* like a real advance-guard artist. Fresh ideas, approaches and techniques are introduced, and he finds universal applications and implications. First he works furiously but reaches soon a mastering talent. This does not imply that his imagination becomes bridled, rather stimulated through a visit to U.S.A. in 1937–1938 as fellow of the Rockefeller Foundation. He is recognized and is in the following decade given a docent position at the Lund University, which enables him freely to continue his work. He finishes this his first motif series with a brilliant summarizing work in three parts, the "Apomixis in Higher Plants". Now being an ended chapter in GUSTAFSSON's production and thus apt to a retrospective judgement, it is apparent how much he has contributed to the understanding not only of the examined genera but also of the apomixis phenomenon in evolution. He had, however, one opportunity to learn that pioneering is not always rewarding, before he was appointed professor of genetics in 1948 at the Forest Research Institute, now the Department of Forest Genetics, Forest College of Sweden, Stockholm.

The decision to discontinue the apomictic studies can, however, not be seen as a gesture of an unappreciated botanist. Long before, a more fundamental theme of evolution had fascinated his need of universality, and this new field of research had gradually prevailed. GUSTAFSSON's first move here can be traced back already to the beginning of 1928. The releasing impulse was no doubt H. J. MULLER's definite demonstration that mutations can be induced by artificial means. A tool was made available to intervene in the basic process of evolution. In the atmosphere of practical application characteristic of the Swedish genetics around H. NILSSON-EHLE, it was certainly logical for his young student ÅKE GUSTAFSSON to suggest mutation experiments to be taken up in crop plants. They also made ideal material as often being autogamous, and the progressive value of a mutation could better be fixed under authentic conditions.

Very soon GUSTAFSSON produced his first chlorophyll mutant and erectoides type in barley. They can be said to be symbols for his theoretical contribution to the viability concept of mutation and for his practical contribution to plant breeding. It is not correct to say that GUSTAFSSON was alone in the beginning to express his conviction that induced mutation imitates spontaneous mutation rather than represents an inferior fraction of it. His strong belief and enormous enthusiasm made, however, his personality to stand out more markedly. As he also brought the first convincing evidences, it cannot be any unjust favouring to appoint him as the founder of mutation breeding. It is much of his merit that nobody today questions our capacity to intervene progressively in the muta-

tion process and in a certain though limited extent even to direct it. All who consider his method over-advertised should better accept the fact that it belongs to a field of biology, where funds are given by measures only applied to physics.

It is interesting to observe how ÅKE GUSTAFSSON in his mutation work develops a more personal style as scientist. He is much more of a theorist than an experimentalist. As soon as he is given freedom to plan his program according to own intentions, and already in 1940 he becomes coordinator of the mutation work at the Swedish Seed Association at Svalöf, he makes the plans, extracts the essential conclusions from gained results and encourages independent side programs. This efficient use of his own capacity enables him to stimulate mutation experiments in Sweden to that extent that he in 1954 is ready formally to constitute the Swedish Group for Theoretical and Applied Mutation Research. By the initial joint publication "Mutation Research in Plants" the same year, the group demonstrates its pioneering position, and still it takes a lead in important parts of mutation research. The group has continually been governed by ÅKE GUSTAFSSON and is now spread over most Scandinavian institutes with genetics on their program. The stimulation within the group has definitely been highly reciprocal, but nevertheless GUSTAFSSON has to have the major credit for its contributions in the field of mutagenic diversity, mutation response, mutant complexity and mutational evolution. The group released the first artificial mutant varieties of the world, and here GUSTAFSSON's own Pallas and Mari barley are not the least important contributions also seen from the aspect of future recombination breeding.

As mentioned briefly above, ÅKE GUSTAFSSON obtained in 1948 a position which also made him to forest geneticist. It can, however, be questioned whether he will ever lose his heart in the wood. It is not only because he is brought up on the plains of South Sweden. His quick and eager temperament is certainly not ideal for a work with century-old objects. It is perhaps symptomatic that his most important contribution in this field of research is an almost instant method, the elaboration together with M. SIMAK of an X-ray diagnostic germinability test for forest tree seeds. But also otherwise the forest breeding has profited from his broad experience, and his administrative abilities are here illustrated by an excellent institute including a young active staff, a phytotron and a gamma field.

The above characterization of ÅKE GUSTAFSSON as personage, scientist and leader has to be kept in mind, when we learn that he has now accepted at the exact age of sixty to take the chair of genetics offered to him at the retirement of his old friend ARNE MÜNTZING. He is still young enough in body and soul to move and close the circle back to his beloved university town Lund, where memories from early friendship with LIDFORSS, NILSSON-EHLE, HERIBERT-NILSSON, SYLVÉN, TEDIN, RASMUSSON, NILSSON-LEISSNER, TURESSON, MÜNTZING, LEVAN and many others still attract him so vividly. Here he will also meet the inspiration and prospective views associated with young students, a need for a leader not enough fulfilled at his research position in Stockholm. Like to every other young man who obtains a new position, we wish him the best of luck and success.

Consciously, the above review of ÅKE GUSTAFSSON as scientist has been given a more humanistic touch. Hardly even in his most strictly scientific publications, GUSTAFSSON is able to hide his humanistic interest and poetic vein. Sometimes this may have caused exaggeration or misunderstanding, but such rare events can more than easily be overlooked for the positive consequences of such a unique combination. Science today has en enormous importance, but few scientists are willing to take the broad views and too many still prefer to sit in their ivory towers. Where ÅKE GUSTAFSSON stands with his characteristic beret and straight out hair, it is always a fresh wind. Friends and colleagues like to see him this way and congratulate him for his achievements through the many years past and wish him to continue in the same brave style.

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