

OBITUARY

ROLF DAHLGREN (1932-1987)

The botanical world was shocked and dismayed at the news of the tragic death of the eminent Swedish botanist, Prof. Rolf Dahlgren, in a traffic accident on 14 February, 1987. A systematic botanist of international stature, Rolf Dahlgren belongs to the illustrious group of Swedish natural scientists, which includes Linnaeus himself and his students Thunberg and Sparrman, who were crucial to the course of botany in southern Africa.

Rolf Martin Teodor Dahlgren (Figure 1) was born in Örebro, Sweden on 7 July 1932, the son of Rudolf Dahlgren, a pharmacist, and Greta Dahlgren of Helsingborg. After matriculating in Kristianstad in 1951, he registered at the University of Lund in August of that year. Subjects he studied included botany, zoology, genetics and chemistry. He was awarded the following degrees from the University of Lund: Fil. Kand. (1955), Fil. Lic. (1959), Fil. Mag. (1959) and Fil. Dr. (1964). In December 1963, he defended his doctoral thesis entitled *Studies on Aspalathus and some related genera in South Africa*.

He worked at the Institute of Systematic Botany of the University of Lund from 1953 to 1973, first as Amanuensis, later as Assistant Lecturer (1960-1963), and then as Docent in Systematic Botany. During the year 1971-1972 he was Acting Professor of Botany. In June 1973 he was appointed Professor at the Botanical Museum of the University of Copenhagen, Denmark. Here he worked until his death, commuting daily between his home in Lund (Sweden) and Copenhagen.

Rolf Dahlgren loved southern Africa, its flora and its peoples. He took a special interest in the Cape Flora and wrote lasting and, in some instances, monumental contributions on some of its largest and most difficult groups. His involvement with the southern African flora was inspired by the tutelage and influence of Profs H. Weimarck and T. Norlindh, who were members of Prof. T. C. E. Fries's extensive botanical expedition to southern Africa in 1930-1931.

The field work for his monographic studies on *Aspalathus* and other Cape taxa was done during two extended visits to this country, lasting in total for about 15 months. On the first visit (July 1956 to February 1957) he was accompanied by Bo Peterson and on the second (August 1965 to February 1966) by Arne Strid (Figure 2). During these visits he was stationed mainly at the Bolus Herbarium and the National Botanic Garden, Kirstenbosch, respectively. Most of his field work, in which he was greatly assisted by Elsie Esterhuysen of the Bolus Herbarium, was done in the Cape Floristic Region. On the second visit he transplanted numerous collections of seedlings of *Aspalathus* (well over 150 species) and other leguminous genera from the veld to the nursery of the National Botanic Garden, Kirstenbosch.

These were used for his studies on chromosome numbers in the genus. Although still rounding off his work on *Aspalathus*, Rolf had by now also turned his attention to the Penaeaceae, one of the Cape endemic families. This involvement with the Penaeaceae seems to mark his move away from species monographs and the beginning of his wider interest in the relationships between families of flowering plants. During this period of work in South Africa he received the Smuts Memorial Fellowship in Botany which was jointly administered by the University of Cape Town and the National Botanic Gardens.

The genus *Aspalathus*, which he chose for his doctoral thesis, is the largest genus of flowering plants endemic to southern Africa (almost 280 species). It is, next to *Erica*, the second largest genus of the Cape Flora, and besides being a taxonomically difficult group, shows many interesting features and evolutionary trends. One of the features elucidated in the numerous papers which he published on the genus, is the convergent evolution between *Aspalathus* and *Cliffortia* (Rosaceae). Rolf also researched the taxonomy and related aspects of various other southern African genera of the Fabaceae, including *Wiborgia*, *Lebeckia*, *Hypocalyptus* and *Lotononis*.



FIGURE 1. — Rolf Martin Teodor Dahlgren, 7 July 1932 - 14 February 1987.



FIGURE 2. — Rolf Dahlgren (on the left) and Arne Strid, collecting *Endonema lateriflora* (L.f.) Gilg (Panaeaceae) on Kanonkop, Riviersonderend Range, above Genadendal, 21 February 1966. Photo: J. P. Rourke.

The endemic family Panaeaceae was revised by him in a series of publications in which he described the new genus *Sonderothamnus*. Among other groups on which he wrote accounts, are the Cape endemic families Geissolomataceae and Retziaceae. Recently he produced a manuscript (with the present author) on the structures and relationships of families and isolated genera endemic to or centred in southern Africa.

His last visit to South Africa was during January/February 1982 when he was Visiting Scientist at the Department of Botany, University of Pretoria. At that time he also attended the AETFAT Congress in Pretoria and undertook a field excursion to northern and eastern Transvaal and Venda, (Figure 3) accompanied by Pieter Kok and the present author.

Rolf Dahlgren collected more than 5 000 numbers of herbarium specimens in southern Africa, mainly of *Aspalathus*, *Wiborgia* and Panaeaceae from the Cape but also including material from Natal, Transvaal and Zimbabwe. The majority of these are housed in LU (first set), BOL, GRA, NBG, PRE and PRU. During numerous botanical travels in other parts of the world he visited countries such as Morocco, Egypt, Sri Lanka, USA (California) and south-western Australia.

Rolf spent most of his spare time in the months before his death on revising and adapting his *Aspalathus* treatment for the *Flora of southern Africa* (FSA). Further field studies were required to help

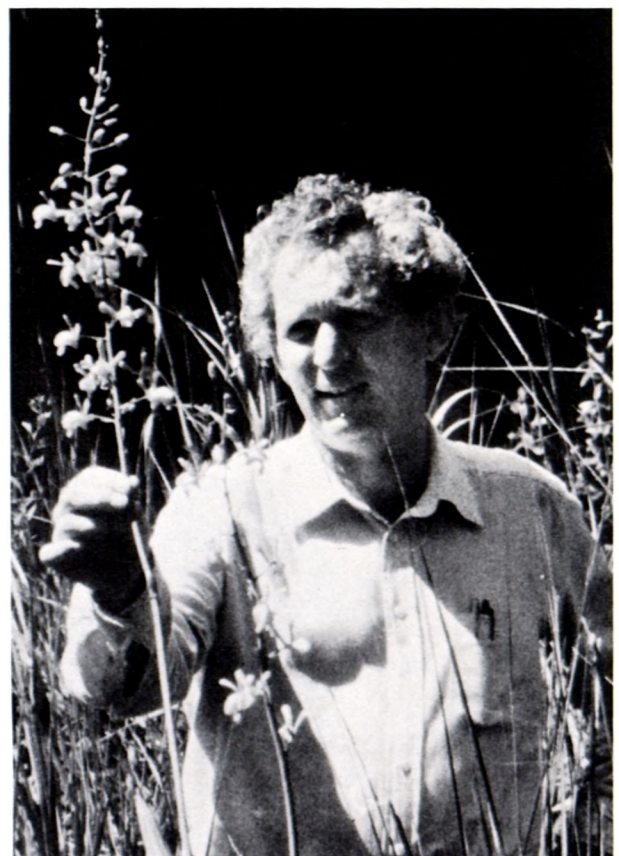


FIGURE 3. — Rolf Dahlgren with *Eulophia angolensis* (Reichb. f.) Summerh. (Orchidaceae), Magoebaskloof, north-eastern Transvaal, February 1982.

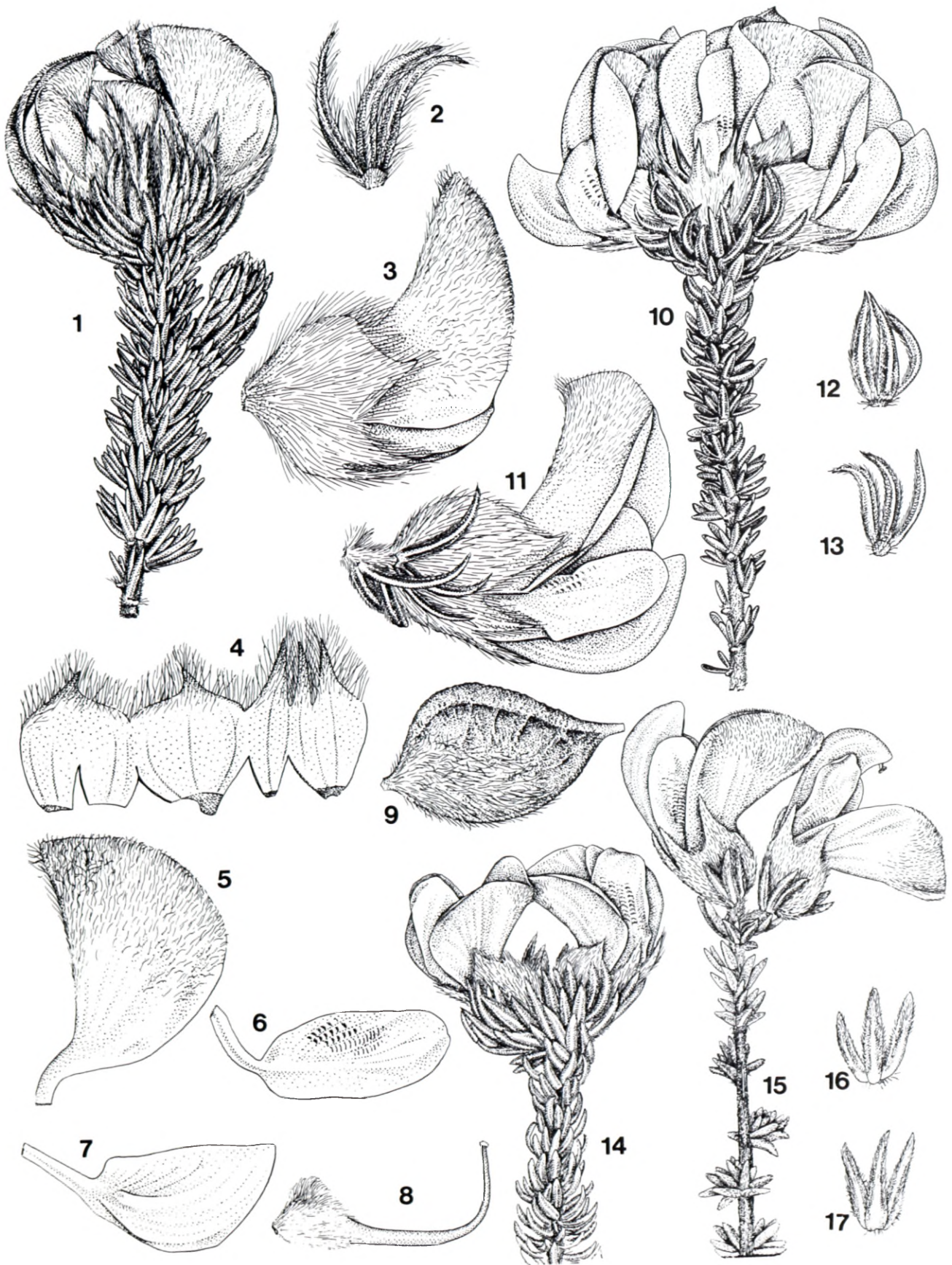


FIGURE 4. — Rolf Dahlgren was also a gifted botanical artist. This illustration of different forms of *Aspalathus triquetra* Thunb. is one of 146 plates accompanying the recently submitted manuscript of his treatment of the genus for the *Flora of southern Africa*.

solve a number of uncertainties, and in 1985 he applied to the Department of Agriculture and Water Supply for a research fellowship to visit the country from August to November, 1986. The application was approved but, sadly, due to factors beyond the realm of science, he regretfully had to turn down the offer. As he put it in a letter written at the time '... I much regret that I cannot go to South Africa. I had looked forward so much to that'. In a letter of March, 1986 he stated '... I thought it (the *Aspalathus* manuscript) might as well be placed with the editorial group, so that it can be printed in due course (God only knows how long one will live and whether I would have time to work on that later on; so it was best to have it completed), but I have no illusions that it has to be published in the nearest future'. The manuscript of his monumental treatment was submitted in mid-1986. It consists of 596 typed pages, numerous distribution maps and 146 plates of line drawings, beautifully executed by Rolf himself (Figure 4). His input into *Aspalathus* is considerable: besides numerous infraspecific taxa and new combinations, he described no fewer than 90 new species.

Rolf has also made contributions of a more local interest to areas other than southern Africa. Together with Swedish colleagues he published accounts on *Eleocharis* (*Drawings of Scandinavian plants*); the flora of northern Morocco (poor fen communities) and chromosome numbers for taxa in the Balearic Islands.

It was, however, Rolf's systematic studies on the families of angiosperms that brought him world fame and ensured reference to his contributions in all modern textbooks on plant systematics. After his appointment at the Botanical Museum in Copenhagen, his interest was focused mainly on angiosperm taxonomy and phylogeny on the higher levels — an interest surely awakened by his early and directive exposure to the marvels of the Cape Flora. In co-operation with colleagues he produced an outstanding Danish taxonomic textbook in four volumes entitled *Angiospermernes taxonomi* (1974–1976). This has appeared in a second revised edition (1980–1981). An outline of a new classification of the angiosperms was presented in 1975 (*Botaniska Notiser* 128). On the basis of extensive factual material, including evidence from macromorphology, anatomy, embryology, cytology, palynology, phytochemistry and various other disciplines, he was able to present a new, much revised classification in 1980 (*Botanical Journal of the Linnean Society* 80). A more recent version of this classification appeared in the proceedings of the symposium 'New evidence of relationships and modern systems of classification' held during the 1981 International Botanical Congress in Sydney, and organized by Rolf and Prof. F. Ehrendorfer (*Nordic Journal of Botany* 3, 1983). Dahlgren's classification has gained wide support and is considered by many botanists to be the best yet developed. It has been used for the layout of botanical gardens in Hungary and West Germany and was presented in Chinese in 1985.

In 1976 Rolf started a major project on monocotyledons. This resulted in two monumental works *The*

Monocotyledons: a comparative study (with H. T. Clifford 1982) and *The families of the Monocotyledons: structure, evolution and taxonomy* (with H. T. Clifford & P. Yeo 1985). These works are the most comprehensive treatments on monocotyledons available today and will, undoubtedly, become classics in this field. About the latter book Rolf wrote '... provocative, splitting (deliberately), but probably quite useful to the new thinking on evolution and taxonomy of monocots ... taxonomic views will probably catch up with us at last'. Cladistics have only recently been applied in botany and Rolf came out strongly in favour of its application and underlying philosophies. In 1983 he published (with F. N. Rasmussen) a comprehensive cladistic evaluation of the monocotyledons (*Evolutionary Biology* 16). Included in the latter is a condensed and elegant introduction to the most important concepts of cladistics. Rolf's work on angiosperm evolution had immediate international impact and in later years he became one of the leading scientists in this field.

To illustrate his angiosperm system, he employed a two-dimensional cladogram in which the orders of angiosperms are represented as the transections of an imaginary phylogenetic tree. This diagram proved to be extremely useful to demonstrate the distribution of character states (*Plant Systematics and Evolution, Supplement 1, 1977*) and has since been used in various contributions by other botanists and chemists.

The continuous co-operation with chemists at the Technical University of Denmark resulted in a treatise on the distribution of iridoid compounds. This led to the re-interpretation of the relationships of various families and family complexes on the basis of chemical, embryological and other properties (several papers in *Botaniska Notiser*). Most of these proposals have subsequently been supported. The distribution of various secondary metabolites in angiosperms was discussed in a 1981 paper (in, D. A. Young & S. Seigler, *Phytochemistry and angiosperm phylogeny*). In 1982, at a protein-taxonomy symposium at Bayreuth, West Germany, Rolf gave a survey of the contribution of the last 30 years' serological research to angiosperm taxonomy (published in 1983 in U. Jensen & D. E. Fairbrothers, *Protein and nucleic acids in plant systematics*).

At another Sydney symposium (1981), he presented (with R. F. Thorne) a major treatise on the circumscription, variation and relationships of the order Myrtales (*Annals of the Missouri Botanical Garden* 71,3,1984). One of his last Congress contributions was at the American Institute of Biological Sciences Meeting held at the University of Massachusetts, Amherst during August 1986. He delivered a paper in a symposium on the biology and relationships of Rhizophoraceae and Anisophyllaceae. In addition to participating in this symposium he also took part in another symposium at the conference: *Systematics and evolution of the monocotyledons*.

For the two year period 1967–1968, Rolf was editor of *Botaniska Notiser* and *Opera Botanica*. At the time of his death he was acting (together with P. Goldblatt) as managing editor for the monocotyle-



FIGURE 5. — For many years Rolf Dahlgren sent his self-made lino-printed Christmas cards to friends all over the world. This is the last one of December 1986.

don volume of the work *Families and genera of vascular plants* — a major project in which all higher plant families are to be elucidated from various aspects. Rolf has given lectures on invitation in several countries including the USA, South Africa, Australia, Germany, England and Scotland. He was a member of the Royal Physiographical Society (Lund), Det Kongelige Danske Videnskaberne Selskab, Copenhagen and many other societies and boards. He valued particularly having been elected to the Royal Swedish Academy of Science in 1986 — the same year that he was honoured with the prestigious Linnean Prize of the Royal Physiographical Society.

Rolf was an extremely friendly and accessible person endowed with great generosity and a fine sense of humour. He had very many friends and stimulated interest in young and old alike. He believed in co-operation and was always eager to send material to specialists for detailed study. He also believed in keeping regular contact with friends and colleagues. In this regard one may mention his self-made lino-printed Christmas cards (Figure 5) sent to friends all over the world — each a much valued piece of art. Rolf was one of those rare botanists with a grasp of flowering plant classification on a worldwide basis. His knowledge of the literature was of amazing depth and of an all-encompassing scope. During conversations with him one got the impression that

he could discuss any plant group, no matter how obscure or rare. Yet he was extremely humble in his view of himself and his achievements. In his sympathetic way he tended to see only the best in everyone and destructive criticism and quarrelsomeness were not in his nature. He once wrote '... I wish I had been more stubborn and self-confident in the views I hold ...'. Thanks to the hospitality of Rolf and his wife, Gertrud, also a botanist, many researchers from different parts of the world, including South Africa, had the privilege of staying with him at their friendly home.

It has been an exceptional experience and opportunity for those of us fortunate to have been acquainted with Rolf. With his death botany has lost a distinguished exponent and we have lost a dear colleague. He will be remembered with great affection and respect by his many friends. Rolf leaves behind his wife Gertrud, and their children Susanna, Helena and Fredrik.

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SUBMITTED FOR PUBLICATION

DAHLGREN, R. & VAN WYK, A. E. Structures and relationships of families endemic to or centred in southern Africa. Proceedings of the 11th AETFAT Plenary Meeting. *Annals of the Missouri Botanical Garden*. In press.

DAHLGREN, R. Papilionoideae: Crotalariaeae: *Aspalathus*. In O.A. Leistner, *Flora of southern Africa* 16, 3, 6. Botanical Research Institute, Pretoria. With editor.

- Papilionoideae: Crotalariaeae: *Wiborgia*. In O.A. Leistner, *Flora of southern Africa* 16, 3, 8. Botanical Research Institute, Pretoria. With editor.

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