

## Awards of the Tropical Grassland Society of Australia Inc.

The Society awards Fellowships to those within its membership who have made significant contributions to the understanding, use and improvement of tropical and subtropical pastures.

An annual award, The Tropical Grassland Society — MRC Award, is made to a commercial operator who has been an innovator in some aspect of tropical grassland development.

### Fellows of the Tropical Grassland Society of Australia Inc. 1997

#### HARRY MAXWELL SHELTON

Max Shelton has carved a notable place in tropical pasture science through his contributions in research and education.

After graduating B.Agr.Sc. with honours in 1968, he received a Ph.D. from the University of Queensland for his research in Laos and Thailand on the competitive relations of rice and stylo. He showed that, by manipulating stylo density, time of planting and fertiliser practice, it was feasible to combine stylo with rice to the benefit of the dry season forage supply and the nitrogen economy of the system.

Much of his subsequent work, and that of his research students, dealt with leucaena. Slow establishment is a constraint to the adoption of leucaena in farm practice. Their research showed that low values of root length density contributed to leucaena's susceptibility to competition from grassy weeds. They also established initial nutrient concentrations which favoured establishment and uncovered the specific role of vesicular arbuscular mycorrhiza in phosphorus nutrition and its interaction with the rhizobial symbiosis which enhances the nitrogen nutrition of leucaena. Max Shelton's work in response to the challenge of the *Heteropsylla cubana* psyllid invasion and the need for greater cold tolerance in leucaena led to the release of the new cultivar Tarramba and an understanding of the potential of *L. leucocephala* x *L. diversifolia* and *L. pallida* hybrids. He has also been involved in studies of condensed tannins which control forage intake and by-pass protein levels. He has established a new international network of scientists interested in leucaena.

Agroforestry and silvopastoralism are relatively recent fields to receive critical research attention. Max Shelton was involved with other scientists in a most significant finding of increased nitrogen uptake of grasses under tree shade which has been identified as being linked

to rates of mineralisation of soil nitrogen. We have also lacked *in vivo* studies of the effects of shade on nutritive value; the divergent responses to shade in forage intake and the morphology of 'shade' and 'sun' species have attracted international attention. Max also worked on the evaluation of forage species in shaded environments, since most plant improvement programs have been conducted in full radiation environments. This has led to the identification of new and elite germplasm, especially in the genus *Arachis*. Concurrently, he has been involved in studies of grazing management and productivity in plantation environments.

Max Shelton is a distinguished educator who has had a primary responsibility for teaching undergraduates about pasture science at the University of Queensland, where he introduced new courses in range management and agroforestry. He has supervised students for eight Ph.Ds and fourteen Masters degrees. The biennial short courses in fodder tree legumes based at the University of Queensland, of which he is joint coordinator, have exposed a wide international clientele to the research in Queensland by CSIRO and State bodies. His jointly authored books, *Forage Tree Legumes in Tropical Agriculture*, *Leucaena: Opportunities and Limitations*, and *Forages for Plantation Crops*, have become standard international texts. He and his colleagues have also worked to change the perceptions of Australian farmers about the role of tree legumes in farming systems.

Dr Shelton was promoted to Associate Professor in 1994 and is currently the convenor of the Pasture and Rangeland Utilization and Management Group in the new School of Land and Food at the University of Queensland. For many years he has been an active proponent of the Tropical Grassland Society and was President in 1992. He is a most worthy recipient of this award.

## RAINER SCHULTZE-KRAFT

After completion of his formal education in Germany, Rainer Schultze-Kraft commenced work in the late 1970s (1976?) in the Tropical Pastures Program of the Centro Internacional de Agricultura Tropical (CIAT), based at Cali, Colombia. This program has had a major impact on the development of tropical pastures throughout the world, particularly in the areas receiving high rainfall and with acid soils.

The collection and evaluation of adapted germplasm was a key factor in the success of the program. Initial work with Australian cultivars proved that most of these were not adapted to acid soils or to the greater disease pressure experienced in most of central and South America. Rainer has been the driving force behind the development of the Genetic Resource collection held at CIAT, and it is this collection which has played a key role in the development of tropical pastures in the humid tropics. It is one of the two key world collections of tropical forages, the other being the Australian Tropical Forage Genetic Resource Collection, Brisbane. However, these two collections complement each other in that the CIAT collection concentrates on germplasm for the humid tropics and for acid soils.

He has led many plant collecting trips throughout south-east Asia and central and South America and has been responsible for the collection, identification, classification, preliminary evaluation and seed increase of many thousands of accessions. He is a recognised world authority on tropical pasture species in general and, in particular, on the genus *Centrosema*. He has played a key role in broadening the appreciation of the potential of this genus well beyond the previous recognition of the value of *Centrosema pubescens*. He has personally collected an appreciable proportion, perhaps 20%, of the total world collection of *Centrosema* germplasm. He was the main driving force behind the 1987 International *Centrosema* Workshop and the publication of the world catalogue of *Centrosema* germplasm. He has also played an important role in the development of cultivars and our understanding of forage plants in other genera, including *Stylosanthes*, *Brachiaria* and *Desmodium*.

In 1991, he returned to Germany where he is continuing his interest in tropical pastures as Professor at the Institute of Plant Production in the Tropics and Subtropics at the University of Hohenheim. He is a worthy recipient of the award as Fellow of the Tropical Grassland Society.

## The Tropical Grassland Society — MRC Award 1997

JIM BLOMFIELD

The Tropical Grassland Society — MRC Award for 1997 has been awarded to Jim and Rosemary Blomfield of 'Strathbogie', Gumlu for demonstrating outstanding innovation in beef production in the seasonally dry tropics over the past 37 years.

Jim has been involved with agriculture throughout his life, being born in the Tenterfield district in 1940 and growing up on the family's wheat and sheep property. After completing a Diploma in Animal Husbandry at the Queensland Agricultural College, Lawes, he drew 'Strathbogie' in a State Government land ballot in 1960. 'Strathbogie', situated on the Bogie River near Gumlu in North Queensland, was part of the land aggregation managed by the Cunningham family. This 22 555 ha property had few permanent watering points and negligible subdivision when Jim drew it in the ballot.

Development work commenced with the sinking of bores and building of fences. Although the average annual rainfall is 750 mm, rainfall is often much less than this mean figure. In 1969, rainfall was well below average and stock losses were heavy in the region. However, Jim showed considerable initiative in supplementing his stock with urea-molasses-water mixtures in roller drums. Not only did he minimise deaths but cattle were in strong condition at the end of the drought and calvings were above average in 1970.

Jim had married Rosemary in 1966 and the couple shared the challenges. During the period of depressed beef prices (the Beef Slump) from 1974 to 1978, Jim and Rosemary supported their young family by producing leather goods for sale. Their workbenches — two well worn iron-bark stumps — remain in the shed as tributes to the resourcefulness of the couple. During this time the family lived in a large shed, well fitted out with modern conveniences, as property development was higher on the agenda than house construction. The house was finally built in 1990.

Jim has been a natural innovator, obtaining snippets of theory and testing them at home with trial and error. This has been particularly so in the area of supplementary feeding. He experimented with the feeding of molasses-urea mixtures, free choice in open troughs. Using high concentrations of urea (11%) and relying on the low

palatability to reduce intake to sub-lethal levels, he considered that piles of bones in the paddock were part of the learning curve. The high urea concentrations proved successful and, by trial and error, he arrived at a final level of 8% urea. This is now the industry standard throughout north Queensland, and MSU is fed widely. Many people contributed to the development of this feeding system but Jim certainly played his part.

On 'Strathbogie', modern cattle management strategies are tested and applied if found appropriate. The property now carries 3000 docile Brahman cross cattle segregated by age and gender and with a well designed breeding program. Infrastructure development has continued to the extent that sufficient permanent water and subdivisional fencing exists to allow careful management of the natural resources. Sustainability of the natural resources is a high priority in decision making.

Since the early 1980s, a major pasture development program has been underway. Verano and Seca stylos have been planted over 8000 ha of ironbark country to provide a better quality diet for growing stock. Part of the strategic plan for the property is to have 0.2 ha ponded pasture per head of stock for drought mitigation purposes. This has been achieved with over 800 ha established. The sandy loam soils on the Bogie River frontage have been developed to buffel-siratro pastures. An area has also been developed with leucaena which is irrigated using keyline furrows. New pasture releases are tested on the property, which is now a living herbarium of promising species.

Jim is an innovator and an achiever. He has developed an holistic approach to property management. His stocking rates are lower than the district average and his productivity is up with the best. He maintains excellent records and keeps a production graph which shows rainfall, herd inventory, brandings and financial returns on a yearly basis since 1961.

Jim Blomfield is the type of thinking land manager with a keenness to test and adopt new ideas which the beef industry requires to face current and future challenges. 'Strathbogie' is light years ahead of most cattle properties due entirely to the enthusiasm and confidence of Jim and Rosemary Blomfield.