**ANPS(A) INDIGENOUS ORCHID STUDY GROUP** **ISSN 1036-9651**

Group Leaders: Don and Pauline Lawie
P.O. Box 230, BABINDA 4861
Phone: 0740 671 577

Newsletter 74 March 2011

Last Newsletter From Don And Pauline Lawie - see below.

## TRIBUTE TO LEONARD JOSEPH LAWLER

LEN LAWLER
16/12/1925 -11/2/2011

We are not too sure how long we have known Len, but over the years we got to know him and his wife, Kate, pretty well. Neither of them volunteered details of their professional accomplishments but we learned of them in bits and pieces through our own interests – for example, Don qualified as a Pharmaceutical Chemist, he plays the bagpipes and we work in a Museum (one of Kate's areas of expertise) – and our shared interests, particularly the love of orchids. Len was a born teacher and anyone who was lucky enough to be in the field with him absorbed much information without realising they were being taught. Len encouraged us as study group leaders. After hearing tributes from others, it became apparent that Len had the facility of making everyone feel that they were special friends and that it was worth persisting in whatever they were attempting to do.

Len's father died when he was eight years old. At the age of 13 he commenced, as a junior in analytical chemical laboratories, a long and illustruous career that culiminated in his becoming the senior professional officer in charge of technical staff and right-hand man to the professor of the Department of Biochemistry and Physiology in the University of Sydney Medical School. Along the way Len became the first President of what is recognised today as the Australian Institute of Medical Scientists, which largely came into being through Len's vision, energy and leadership, when he recognised the need for national accreditation while only 25-26 years old. His work was recognised in 2009 with the award of the Inaugural AIMS Merit Award, as the Institute's first President. The Institute also maintains an annual student prize, the Leonard J Lawler Prize.

During his five years in the AIF Len's laboratory expertise led to his being posted to the 1st Australian Field Trials Company based at Gunyarra Experimental Station just south of Proserpine in north Queensland. On rare days off he investigated the surrounding countryside, particularly the Whitsunday Islands and may well have been impressed by the profusion of epiphytic orchids in the rainforest. Len had been interested in orchids since he was a boy.

In 1969 Len gained his Fellowship of the Australian Institute of Medical Laboratory Technology by thesis. His research investigated the possible medicinal value of plants; he screened 203 Australian orchids and 316 plants from New Guinea for alkaloids, and 40 Australian species of *Dendrobium* and two New Guinea species of *Gramatophyllum* for antibiotic activity. Len made field trips in northern NSW, to tropical Queensland in 1966, and twice to Papua New Guinea, in 1967 and 1968. In 1969 Len attended the 6th World Orchid Conference in Sydney.

After marrying in 1970 Len and Kate settled in surburban Sydney where he had two small bush-houses devoted to native Australian orchids. During the next decade he and Kate made many camping excursions to the Hunter Valley region, and an epic trip to Portland Roads, Cape York Peninsula in 1978, a 9000km round trip. They also made four trips to Europe during which Len met various orchid identities and had the opportunity to consult library materials on the uses of orchids. In in 1981 he organised an Orchid Symposium as a satellite of the 13th International Botanical Congress in Sydney.

Len was influential in the early days of the Australian Orchid Foundation (AOF) which was established in 1976. He conceived the idea for a seed bank and was the first curator from 1977 to 1981. He served on the Research Committee for many years and was chairman from 1981 to 1986.

Len's research interests had turned increasingly to the uses which indigenous people around the world found for orchids. In 1984 he made his mark in orchidology at the world level with his epic study titled *Ethnobotany of the Orchidaceae.* This paper is 123 pages long and includes over 1,000 references – a clear indication of Len's breadth of mind and meticulous work. Twenty-seven years later, it remains the definitive work on the subject.

After retiring in 1986, Len and Kate moved to the Atherton Tablelands in north Queensland, returning to the tropical landscapes and flora which had impressed him during his time at Proserpine. He joined the Atherton Tableland Orchid Society, holding many positions over the years including president, and latterly patron. Len became very well known in Queensland running an AOF sponsored project to catalogue and record the distribution of rare orchids. Notable among his discoveries was *Malaxis lawleri* which he found near Cooktown and which was named in his honour. He made several trips to Cape York Peninsula researching Aboriginal uses of plants, and was always on the lookout for new and interesting orchid species.

Len made regular contributions to The *Australian Orchid Review* on many topics including a series titled "Looking back" which highlighted events described in old copies of the *Australian Orchid Review.* In all he wrote about 40 scientific and popular articles on orchids and was a regular speaker at meetings and conferences. In December 1999 he was presented with an Award of Honour from the AOF.

It is pleasing to record – from the above information supplied to us – that Len's professional and personal contributions to science and the orchid world were recognised in his lifetime. He was also a member of the Indigenous Orchid Study Group and it was heart-warming to hear so many of our fellow SGAP members extol his influence on their orchid appreciation, his endearing personal attributes, his gentlemanly persona, and his desirability as a friend and neighbour. He is missed.

## COMMON ORCHIDS OF TASMANIA

We don't have any members in Tasmania but I know many mainlanders love to visit that part of our country and that the beauty of the plants and landscape is the main attraction. *Eucryphia*, the newsletter of the Australian Plants Society Tasmania Inc. has an article in the October 2010 edition on Tasmanian orchids by Phil Collier. He says that Spring is the best time to find native orchids in the heath and woodlands, while in the mountains orchid flowering peaks in Summer. Phil recommends www.upclose.net.au for "some wonderful images", and the Society's *Common Orchids of Tasmania* which he says was "recently extensively revised" and "illustrates and describes nearly all of Tasmania's orchids".

*APOSTASIA WALLICHII* Australia's Most Primitive Orchid

Plate 1. *Apostasia wallichii* in situ.

A few months back Cairns SGAP had an excursion to the Barron Falls Boardwalk near Kuranda. On reaching the open forest area, we observed many small grass-like plantsabout 15cms tall on the ground bearing yellow flowers. These were primitive orchids growing in the leafy mulch. *Apostasia wallichii* is the name of this orchid.

APOSTASIOIDEAE-Primitive Orchids

Apostasioideaeis a sub-family of Orchidaceae and contains two genera - *Apostasia* and *Neuwiedia*. *Apostasia wallichii* is the only member of the sub-family present in Australia. Its presence in tropical Asia shows it is relic of a once wider distribution. Apostasioideae is regarded as a link between orchids and lily-like plants. N*euwiedia*, with three stamens as present in lilies (Fig.1.), is probably more primitive than *Apostasia* which has just two stamens (Figs.1 & 2). Here, the third stamen has been replaced with a staminode. From an evolutionary concept, the family is sister to the remaining orchids which have only one fertile anther united with the female structures to form the column.

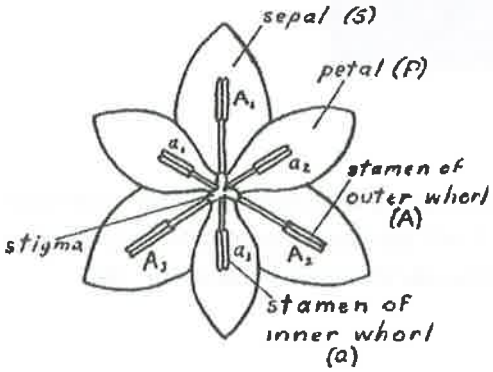


Fig.1. Lily flower showing three stamens and three staminodes with anthers.

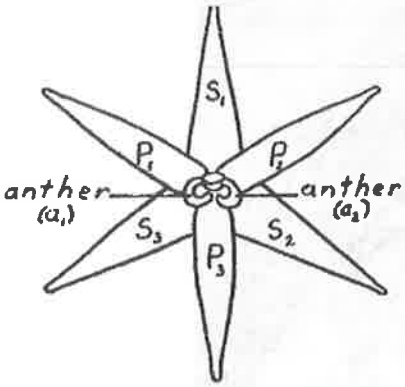


Fig.2. *Apostasia* showing 2 stamens and anthers.

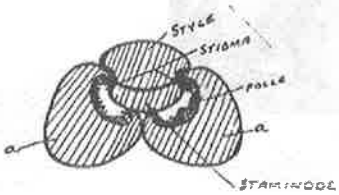


Fig.3. Highly magnified column of Apostasia showing two fertile stamens and one sterile staminode.

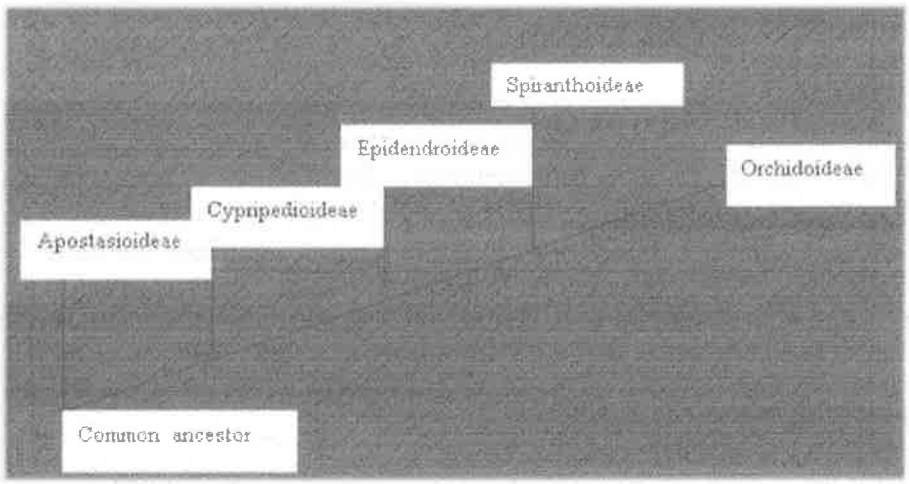


Fig.4. Diagram of the estimated lineage of Orchidaceae subfamilies.

What this means is that all orchids are descended from an unknown common ancestor with three stamens. Sub-family Apostasioideae was the first to branch off the family tree. Next to branch was the Cypripedioideae, then Epidendroideae, followed by Spiranthoideae and last of all, the Orchidoideae, as shown in Diagram 4.

*Apostasia wallichii* is a terrestrial orchid with elongate stems and stilt roots without velamen. Storage nodules are found on the roots. The spirally arranged leaves are convolute and non-articulate. The inflorescence is terminal, erect and spreading and the flowers are spiral. Unlike orchids in general, the lip or labellum of *Apostasia wallichii* is similar to the petals. Two stamens and a staminode are partly united with each other and with the slender style to form a tube that is analogous to the tubular structure in the Solanum family (tomatoes). In this family the filaments form a tube and each anther opens by a pore that has to be 'buzzed' or vibrated by a bee to release the pollen.

However, in *Apostasia* the two fertile lateral stamens are introrse, i.e. facing inwards. Each anther opens longitudinally and not by a pore so that when it dehisces (opens) the pollen is released inwards (within the tube). This may facilitate autogamy or self-fertilisation and a resulting high seed set which may account for so many capsules being observed. On the other hand, bees have been observed around *Apostasia* and the tubular arrangement does suggest 'buzz- pollination'. Cross pollination is therefore quite likely to occur. Powdery pollen is in monads and not grouped into pollinia like more developed orchids. There is no rostellum present. Other primitive features are fleshy fruit, 3 locular ovaries, abscission layer between ovary and perianth and a crustose seed coat.

References:Dockrill, A.W. (1992), Australian Indigenous Orchids, Vol.1. Surrey Beatty & Sons NSW.
Dressler, R.L., (1993), Phylogeny & Classification of the Orchid Family. Cambridge University Press.

## LAST NEWSLETTER FROM DON AND PAULINE LAWIE

After 15 years as leaders of the Indigenous Orchid Study Group, Don and I have decided to relinguish the position. In all areas of publishing the trend is towards coloured photographs and electronic delivery. Some people are amased to hear that dial up still exists. Most people don't even know what internet speeds they get and do not understand what it means to have a speed of between 21.6 Kbs and 36 Kbs, at best, in our backwater makes this impossible for us. My frustration is exacerbated by the necessicity to purchase new equipment. I have just run out of puff. When one has to resort to using web information to fill a newsletter that's pretty obvious.

If any of you is interested in taking on the job of leader of this study group, please contact

Mr Geoff Lay
National Co-ordinator of Study Groups
Australian Native Plants Society (Australia) Inc.
2 Kerry Pde
Mount Albert Nth 3129
Email: gjmk.lays@bigpond.com

We would be happy for anyone interested to telephone us to discuss what is involved.

It is of course a privilege to to hold this position and it has enhanced our lives in many ways, particularly in the relationships we have formed with many of the members. We would like to say thank you to those members who have contributed the bulk of the articles over the years. Kate Vlcek, Margaret Bradhurst and Mary Gandini have added immensely to documented orchid knowledge.

Additionally, we will miss receiving all the State booklets which are sent to all study group leaders; they are full of interesting articles that purvey a sense of the extent and variety of the wonderful plants to be found throughout Australia and what they mean to so many people.

(From Don) We contacted Len Butt, Leader of the Indigenous Orchid Study Group, in 1995 and asked him to enroll us as members. Len returned the $5 subscription (n.b. unchanged since!) with a polite note to say that he was disbanding the Study Group unless somebody took over the position of leader. Pauline and I had a conference, and rather hesitantly offered ourselves to Len. He accepted us and wished us well and we embarked on a career of discovery – of orchids, of deadlines, member communication and of ourselves.

Except for one difficult year we have consistently produced four newsletters each year. Quality and size has varied markedly – I produced one issue all on my own, typed on a manual typewriter and photocopied. Of late, Pauline's expertise has been apparent in the increasing sophistication evidenced by set-out and colour photographs. This has been helped immensely by electronic submissions from contributors, and is quite beyond my ability to organise. Our best efforts were those in which all the content was provided by members; when this was short, we improvised. This was facilitated by our living in a wonderland of lowland tropical ranforest – we only have to look out any window to be inspired by Nature's Majesty.

We have received some delightful letters and have made friends of long standing, and I trust those friendships will endure. We have been encouraged by feedback from our newsletters, but after I wrote yet another piece about "nindiis" and "Goldens" we realised that some fresh leadership was called for. The Indigenous Orchid Study Group was one of the first Study Groups established in the early days of SGAP and, though it has not had a continuous life, it is still worthwhile to continue attempting to disseminate knowledge of those wonderful plants to as wide an audience as possible. We wish the new leader good fortune in taking the Group along a different, more technical route.

Farewell from Don and Pauline.

☺ ☺