

issn 1170-4543

**A young male tree weta
visiting *Earina autumnalis*,**

Wellington, 11pm 16 Feb 04.
The flowers are white & heavily
evening-scented, suggesting a night
pollinator.

Infra-red photo, Sony DSC F-707 digital.

the new zealand native orchid journal march 2004 no. 90

Science is nothing but trained and organised common sense: TH Huxley 1825-95

1. *The science of scents— 4: a nostalgic nosology of noses*

But soft! methinks I scent the morning air—Shakespeare.

Accord: The basic character or theme of a fragrance. Perfume accords are a balanced blend of three or four notes which lose their individual identity to create a completely new, unified odour impression.

Aldehydes: Organic chemicals which can be derived from natural material or manmade from ethyl alcohol by hydrogen loss. They represent a major series of perfume ingredients and are used in extreme dilution in the preparation of perfumes. Aldehydes are used in the perfume industry for their particularly vivid notes.

Amber: Obtained from fir trees and when processed gives a heavy, full bodied, powdery, warm fragrance tone.

Animal: Refers to the warm, sensual and heady base notes once associated with the natural odour of musk, ambergris, civet, and castoreum, now produced by some vegetable materials and aroma chemicals.

Apocrines: A type of sweat gland which contributes to the sexual and body scent in humans and which influences the odour characteristics of one's fragrance.

Aroma: A term used to describe a sensation which is between smell and taste, such as the aroma of coffee.

Aroma chemicals: Any natural isolates or synthetics which have an aroma.

Aroma-ology: A new science, developed by the Olfactory Research Fund, dedicated to the study of the interrelationship between psychology and the latest in fragrance technology to elicit a variety of specific feelings and emotions...relaxation, exhilaration, sensuality, happiness and well-being.

Aromatherapy: The therapeutic use of pure essential oils and herbs in body massage, the result of which is described by proponents as “healing, beautifying and soothing” the body

and mind, has its roots in the folk medicine practised in primitive cultures.

Attar (Otto): From the ancient Persian word “to smell sweet”. Attar or otto refers to essential oil obtained by distillation and, in particular, that of the Bulgarian rose, an extremely precious perfumery material.

Balsams: Sticky, resinous materials obtained from trees or shrubs which give a combined sweet-woody odour associated with well-seasoned, non-coniferous woods such as maple.

Bitter: Describes a perfume odour which has a metallic green quality, without sweetness.

Body: The main fragrance theme—the middle or “heart” of a perfume. Also describes a fragrance that is well-rounded or full.

Chypre: A fragrance family or type—a complex of moss mixed with woods, flowers or fruit odours.

Citrus: Odours from citrus fruits such as orange, lemon, lime, mandarin and bergamot which give fresh, fruity top notes used especially in eau fraiche, classical and men's colognes.

Classic: A classic fragrance can be considered in the same vein as classic literature or architecture. A fragrance that has been widely accepted by generation after generation and is in use for a minimum of 15 years.

Cloying: An odour that is excessively sticky sweet.

Cologne (women's): A light form of fragrance with a low concentration of perfume oils mixed with diluted alcohol.

Cologne (men's): More concentrated than women's colognes, similar to the concentration of toilet water and in some instances perfume.

Cologne (classical): A term reserved for those fragrances which are basically citrus blends and do not have a perfume parent.

Depth: Refers to a fragrance odour of low volatility with a dimension that is rich and full bodied.

Diffusion: The ability of a fragrance to radiate quickly around the wearer and subtly permeate the environment.

Dry: A sensation produced by certain perfume ingredients which give a woody, masculine effect.

Dry down: The final phase of a fragrance—the character which appears several hours after application. Perfumers evaluate the base notes and the tenacity of the fragrance during this stage.

Earthy: The provocative odour of freshly turned earth, musty and rooty.

Essences: Products which endeavour to capture or emphasize the highly volatile top notes of natural products.

Essential: Volatile oil obtained by various processes from flowers, oil leaves, roots, barks, stems, fruits, seeds and woods.

Evanescent: Fleeting or quickly vanishing fragrance.

Extracts: Concentrated perfume or flower products obtained through the process of extraction using volatile solvents.

Fatigue: Odour fatigue results from overlong exposure to an odour. The nose can no longer discern that particular smell.

Flat: Lacking in lift, diffusion and distinction.

Floral: Fragrance family or type; either characteristic of a specific flower or a blend of several flower notes.

Flowery: Possessing a fragrance resembling a flower. Term often used to describe certain aromatic chemicals such as heliotropin, hedione, rhodinol and artistic aldehyde.

Forest blends: Aromatic, woody-mossy notes.

Fougere: The French word for “fern.” Fougere fragrances depend on aromatic chemicals to produce the fern-like notes which combine well with lavender, citrus and coumarin in fragrances for men.

Fresh: An invigorating, outdoor or nature-inspired type fragrance with green, citrus notes.

Fruity: The impression of full, ripe, edible fruit odours (excluding citrus) within the fragrance theme.

Full-bodied: Well-rounded fragrance possessing depth and richness.

Fungal: Odours suggestive of moulds, mushrooms and fungi. Important notes in muguet fragrances as well as other florals.

Green: Odour reminiscent of fresh-cut grass, leaves or a warm, moist forest. Green notes add lift and vigour to a fragrance composition.

Harmonious: Order, accord and unity in fragrance.

Harsh: A crude, unbalanced, rough pungent odour.

Hay: A sweet clover odour.

Heady: Exhilarating, sparkling, stimulating.

Heart: The core of a perfume composition which gives it its character.

Heavy: An odour which can be forceful, intense, often sweet and balsamic.

Herbaceous: A fragrance note that is grassy-green, spicy and somewhat therapeutic, e.g. thyme, hyssop, chamomile.

Honey: A very sweet, heavy, syrupy, fragrance note; is tenacious.

Ionones: One of the most valued synthesized products used by the perfumer. Essential to violet perfumes. Used in small amounts in floral, woody and herbaceous perfumes.

Lastingness: The ability of a fragrance to retain its character over a given period of time.

Leafy: One of the many variations of the green note.

Leather: Fragrance type and odour resembling the sweet, pungent smokiness characteristic of the ingredients used in the tanning process of leathers.

Lift: To add life to a fragrance blend is to give it lift and some brilliancy; lift can also refer to diffusiveness of a given blend. A perfume having lift has a brilliant top note with wide diffusiveness.

Light: A generally non-sweet, non-cloying fragrance where the fresh note is predominant. Often formulated as an eau

fraiche or a deodorant cologne for all over body wear in warm climates or for sports.

Mellow: A fragrance that gives a balanced, smooth and rich impression.

Middle notes: The middle or “heart” notes make up a main blend of a fragrance that classifies the fragrance family or accord. It usually takes from ten to twenty minutes for the middle notes to develop fully on the skin.

Modern: In perfumery the modern era began at the beginning of the 20th century when synthetic aroma chemicals such as aldehydes were first used. A modern fragrance is a harmonious conception of the perfumer based on new notes or harmonies often unknown in nature.

Mossy: The odour suggestive of the aromatic lichens, and mosses, primarily oak moss and tree moss; reminiscent of forest depths.

Note: Borrowed from the language of music to indicate an olfactory impression of a single smell, or to indicate the three parts of a perfume—top note, middle note, base note.

Odour: Airborne chemicals emanating from water, objects, one’s body, flowers or fragrance that stimulate the olfactory system. The characteristic smell of something.

Odour memory: The ability of a perfumer to hold, and bring to recall, hundreds of single perfume odours and odour blends.

Odoriferous: Emitting an odour.

Oriental: Fragrance family or type denoting heavy, full bodied and tenacious perfumes.

Palette: The range of perfume ingredients from which a perfumer selects to use in the formulation of a perfume.

Perfume: Most highly concentrated form of fragrance, the strongest and the most lasting. Perfume may contain hundreds of ingredients within a single formulation.

Pheromone: Chemical substance secreted by all animals (including perhaps humans) to produce a response by other members of the same species. Sexual attractants are the most widely studied and described.

Pomades: Combination of purified fats and flower oils produced by the enfleurage process.

Powdery: Sweet, dry, somewhat musky odour.

Resinoids: Are extracts of gums, balsams, resins or roots (orris) which consist in whole or in part of resinous materials. They are generally used as fixatives in perfume compositions.

Rounding out: Perfume ingredients, often from natural origin, added to fragrance compositions to enrich, modify or soften any harsh qualities.

Specialties: Natural oils, natural isolates or synthetics, either alone or in combination, which are used as building blocks for fragrance compounds. They are less complex than a finished fragrance compound.

Spicy: Piquant or pungent notes such as clove oil, cinnamon; characteristic of notes of carnation, ginger, lavender.

Strength: The relative intensity of a fragrance impression.

Sweet: Can be used to describe a fragrance that has richness and ambrosial characteristics associated with sweet taste.

Tenacity: The ability of a perfume to last, or a fragrance note to retain its characteristic odour.

Thin: When a fragrance complex has not been given enough “florality” or warmth to soften the impact of the more aggressive and volatile components; lacking in body and depth.

Tonality: Dominant note or theme of a fragrance.

Top note: The first impression of a fragrance when sniffed or applied to the skin; usually the most volatile ingredients in a perfume.

Undertones: The subtle characteristics of the fragrance background.

Velvety: A soft, smooth, mellow fragrance without harsh chemical notes.

Woody: An odour which is linked to the aroma of freshly cut, dry wood or fibrous root such as sandalwood or vetiver.

2. David Lang and British orchids

It is a delight to welcome an old friend to the pages of the *NZ Native Orchid Journal*. David Lang begins a four-part series on British orchids in this issue.

I took sabbatical leave in England in the spring of 1986, and decided to try to see some native orchids at the weekends. There was a book in the Dunedin Public Library called *British orchids*, written by one David Lang, and the blurb seemed to indicate that he was a vet, and that he lived in Lewes, Sussex. I wrote to him at "The veterinary surgery, Lewes, Sussex, England" and got a warm response.

Even better were the cakes and ale that he served when I arrived on his doorstep one Friday evening, and better still the companionship and interest he showed in subsequent weeks.

He took me to a range of favorite orchid spots, and gave me maps and directions to many more, in different parts of England and Wales. My weekends were spent on wonderful treasure-hunts to picturesque places. Often the directions included local pubs where the beer or the food was notable.

He it was who told me something of orchid photography: no flash, no artificial light, no artificial backgrounds, just a little "gardening" to show the orchid properly, replaced after the shot.

He is working on a third edition of *British orchids*, has written a specialized book on the orchids of Sussex, and has examined in detail the orchid flora of Bhutan, with another book on that subject in preparation.

Britain is isolated, as is New Zealand, but its much closer proximity to the mainland means there is little endemism among its orchid flora, or at least a greater proportion of British taxa are also European than New Zealand taxa are also Australian. All are terrestrial; most are insect-pollinated and therefore attractive.

3. Throwback *Thelymitra hatchii* column

I illustrated a *T. longifolia* column with three cilia-bearing column arms some time ago, and recently found a similar deformed column on *T. hatchii* in the Tararuas. It had six cilia-bearing arms and two bare appendages, with a well-formed stigma inside the sack-like column, but no pollinia.



Deformed columns of *Thelymitra hatchii*: above left from back, right from front, and below, incised at the front midline and opened out



4. Floral mimicry

Perhaps 10,000 orchid species employ some form of mimicry. Mimicry is the resemblance of one organism to another, a resemblance that confers an adaptive advantage on at least one of the organisms. Darwin recognized it in the early days of evolutionary theory. The resemblance of some insects to leaves (mimetic camouflage) is a simple example of mimicry: carnivores ignore the insect because they don't like leaves. Mimicry may assist reproduction and it may involve any sensory mode – baby burrowing owls imitate the sound of rattlesnakes, and some *Gastrodia* “long column” have the scent of freesias.

Mimicry has been most extensively studied in predation – when a tasty butterfly mimics a nasty-tasting butterfly in order to dupe the predator it is called Batesian mimicry (there is also Mullerian mimicry, where several nasty species adopt a common appearance). In Batesian mimicry there are thus three actors – the **mimic**, the **model** and the **dupe**. The mimic gains, while the model and the dupe lose. The mimic's success requires the dupe to (1) discriminate between prey that are tasty and nasty; (2) remember the nasty experience, and learn and remember the appearance of the nasty prey; (3) be deceived, so that having learned to avoid the nasty prey, it must at least sometimes be fooled by tasties that look like nasties.

Let's say the tasty mimic is so successful in imitating the model that it eventually outnumbers the model; and let's say the dupe is at times forgetful. He forgets prey that look like this are nasty, eats one, and (now that tasty mimics outnumber nasty models) is likely to find it tasty (in this way lapses in memory may favour his survival). He starts to eat prey that look like this, relishing the tastiness of most of them, until the nasty population again outnumbers the tasty population and he finds he is eating a lot of nasty-tasting prey, so stops. The tasty

population, protected, takes off again....

The population of Batesian mimics thus follows a sine wave. The model is eaten sometimes, but cannot get rid of the mimic by changing its own appearance, because it is exactly that appearance that conferred survival advantage, and anyway the mimic would change just as quickly to resemble the new appearance—and probably does.

Batesian mimicry theory can be applied to floral mimicry and thus to orchids. In animals a tasty mimic obtains advantage by resembling a nasty model; in flowers a non-rewarding (to a pollinator) mimic obtains advantage by resembling a rewarding model; the evolutionary processes are the same.

For instance there is a suggestion that *Thelymitra* aff. *longifolia* (the mimic) looks like manuka (the model) in order to fool the pollinating native bee (the dupe) into “thinking” there is a nectar reward when there is none; this would similarly require the bee to be able to discriminate, learn, remember and be fooled (can a bee be so educated? Interestingly, most visitors to deceptive Batesian floral mimics in the Mediterranean region are solitary bees too). The process would provide an advantage to the orchid, and would cause the bee to expend fruitless energy. It also has the theoretical potential to harm the manuka if the orchids eventually outnumbered the manuka and the bees learned there was not much nectar to be had by visiting small white flowers with dark centres.

Pollinators will learn to differentiate the rewarding manuka from the nonrewarding *Thelymitra* of course, but there is another trick up the mimic's sleeve: if there is some variation in the appearance of the mimic, it is harder for the pollinator to learn which flowers are nonrewarding—i.e. one might expect many forms of *T. aff. longifolia*, and it is indeed polymorphic in the Far North.

Cryptostylis subulata exudes a pheromone that attracts male ichneumonid wasps, because they cannot distinguish it from the

mating pheromones of female wasps. The orchid is the mimic, the female wasp the model, and the male wasp the dupe. The male wasps hatch a couple of weeks before the female wasps, and in that interval the orchid blooms and enjoys the undivided attention of the male wasps. Later, when the female wasps hatch, the males find them more attractive, and turn to them instead of the orchid. Who wins? The orchid – and perhaps the male wasp if he enjoys the orchid. Who loses? Well, nobody really – so is this truly Batesian? Or is it symbiosis?

Many other orchids mimic female insect models in their visible and tactile labellar decoration (e.g. *Chiloglottis trapeziformis*).

Mimicry between plants requires strongly overlapping distributions over enough time for co-evolution to have occurred, a significant overlap in flowering time, and sharing the same pollinator species. A disadvantage of mimicry between plants is improper pollen transfer (the deposition of pollen from one species onto another); orchids reduce the chances of this by aggregating pollen into pollinia, whose shape keys best into other flowers of the same species. Flower longevity also confers advantage, and colony-formation may reduce improper pollen transfer.

How does this evolution take place? how did *Calochilus* get to look like an insect if *Calochilus* evolved from *Thelymitra*?

Darwin favoured **natural selection** where individuals with particular features (within-species variation) proved most fit to reproduce, so were successful. Mutationists regarded natural selection as largely irrelevant, claiming evolution by way of **mutations** which, if successful, would favour the mutant individuals. The **modern synthesisists** say that natural selection moulds organisms by sifting the raw material provided by genetic mutation. But then - how small or how large are the initial changes provided by mutation? You can't believe *Thelymitra* evolved into *Calochilus* in one massive mutation, and yet what

advantage would lesser changes afford?

Well, first of all, it didn't. *Thelymitra* didn't evolve into *Calochilus*: it was some unknown ancestor of both that evolved into each. That ancestor just may have looked like *Calomitra*, the manmade intergeneric hybrid between the two.

But second, the answer appears to be encapsulated in what is called the “two-phase theory”: first, a relatively large mutation establishes a rough resemblance to the model, altering the original pattern of the organism considerably but achieving only approximate mimicry; and then this rough resemblance is slowly improved by the selection of many modifier genes each of small effect, which may eventually produce very accurate mimicry.

Many specimens of the old *Thelymitra* and *Calochilus* ancestor got hit by cosmic rays, and many of them developed useless abnormalities that might have been inherited for a while but died out eventually (the curious exploded *Pterostylis* of Upper Morrison's Creek [J41 p2] is a modern example of a doomed mutation). Then one was hit, had a genetic change, and its offspring had such hairy labella that pollinating insects tried to mate with it, and in doing so they increased cross-pollination, which conferred an advantage on those carrying this inherited mutation. The new orchid was successful, and gradually small improvements were made by the natural selection of favorable within-species variations. Perhaps, ages later, one of its descendants also got zapped by the raygun of the great genetic engineer in the sky and there was another big change. Eventually we got a *Calochilus*. By a similar process we got an ancestor of *Thelymitra* aff. *longifolia*, whose flowers underwent successive changes, keeping up with those of manuka flowers until the two look as alike as they do today—*Ed.*

See also Roy BA, Widmer A (1999). Floral mimicry: a fascinating yet poorly understood phenomenon. *Trends in plant science*. 4 (8): 325-340.

5. Colenso's dark-purple

One with affinities to *Thelymitra longifolia* around Wellington and the southern Wairarapa is a purple-stemmed slender little plant with pink to white flowers in November-December; its column is indistinguishable structurally from *T. longifolia*, but its shape is otherwise and consistently quite unlike that of *T. longifolia*. Close examination of Colenso's description of *T. purpureo-fusca* (*Trans.N.Z.I.* 1885; 17: 249), together with the type specimen at Kew, imply this is the taxon he was describing, and the consistency of its structure supports the use of Colenso's name as a useful descriptor. He wrote,

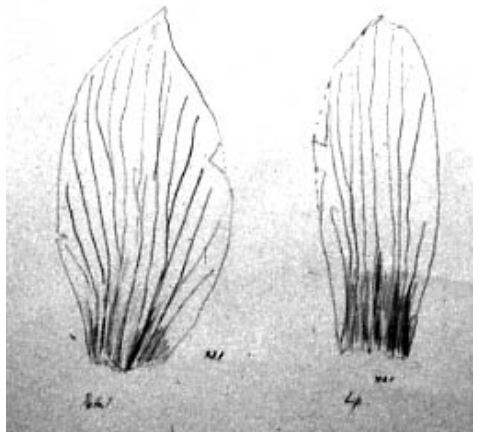
"The whole plant exceedingly slender, of a dusky purple-brown or purplish-red colour; tubers narrow, oblong. Leaf narrow, 1½ - 3 lines wide, 7-10 inches long, thickish, channeled, glabrous. Scape erect, very slender, almost filiform, bibracteate, 8-10 inches long; raceme 3-5-flowered (occasionally only one); flowers rather distant, bracteolate on long slender pedicels; perianth ½ inch diameter; sepals dark purple-brown edged with a bright green line, a yellow central stripe and broad white exterior margins, sub-ovate-acuminate, much concave, dorsal one largest, the two laterals with a long mucro; petals light pink, sometimes white, elliptic-oblong, obtuse, broader than sepals; lip the smallest; column pink dashed with blue, apex stout, much emarginate, incurved, dark and edged with bright yellow (as in *T. nemoralis*), but the plumose appendages are more produced and rise above the column; anterior base slightly erose; stigmatic gland similar to that of *T. nemoralis* (i.e. bilobed at base, trilobed at apex including rostellum); anther very acuminate, tip subulate. *Hab.* In *Fagus* woods on dry hills with (*T. nemoralis*) but usually higher up; 1881-3: *W.C. Obs.* I have both sought and watched this plant very closely; from the fact of its widely different general appearance at all stages from *T. nemoralis*, and yet, on examination and dissection, I find it possessing such scanty differential characters; the principal ones consisting in its plumose

staminodia rising *above* the tip of the column – its narrower and variegated sepals – its slenderer proportions, dusky aspect and fewer flowers. In all these however it is very uniform; as I have seen and examined (through patiently waiting for their development) some scores of flowers and plants. It has also a peculiar habit of growth, being often found in little clumps (like crocuses and jonquils), from which arise 6-12 scapes. It wears a very striking and elegant appearance, when its dark perianths with their segments edged with white are about expanding, from their contrasts in colour. Notwithstanding the column-appendages being produced beyond its tip, while in *T. nemoralis* they are below it, this species is naturally very closely allied to that one."

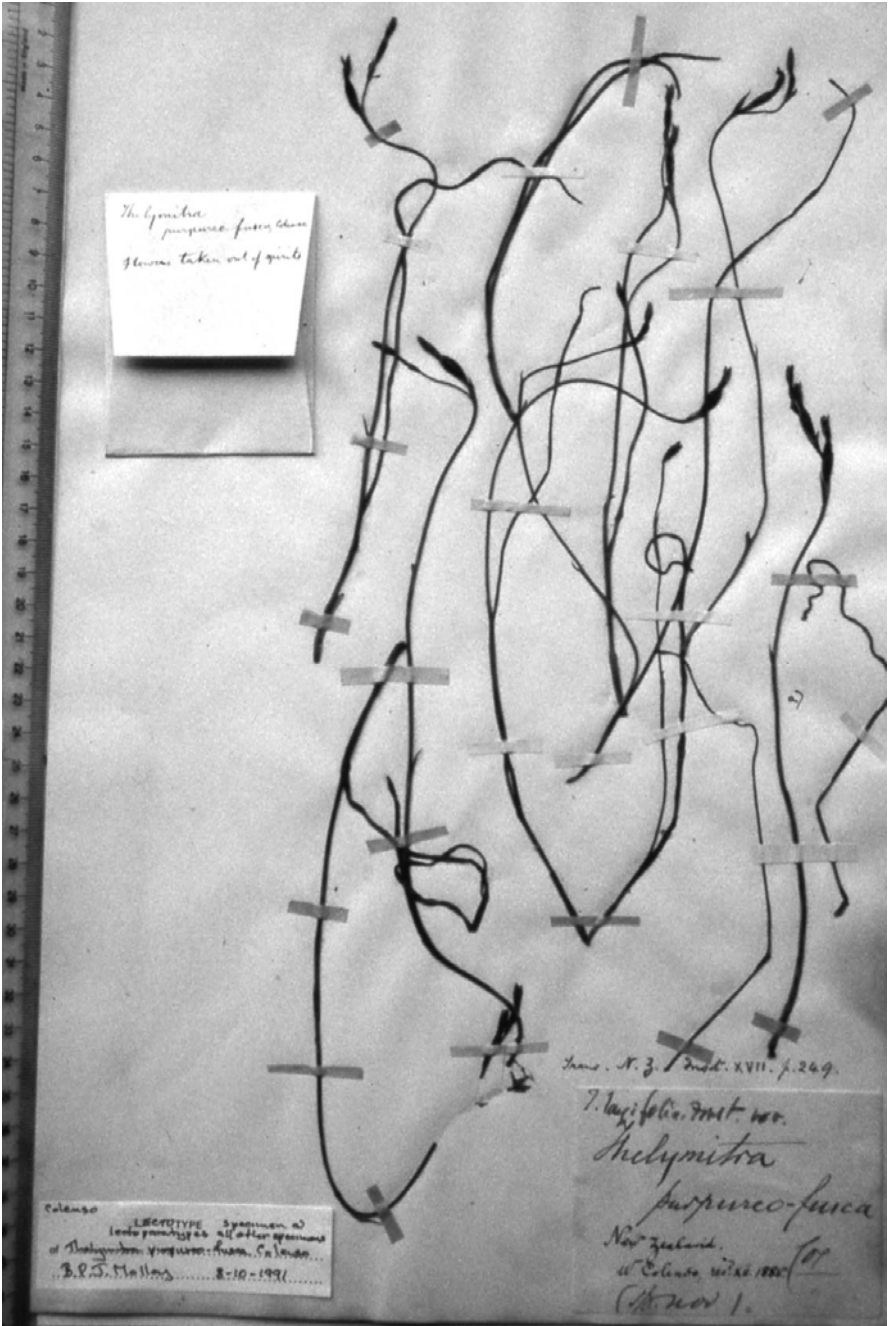
Cheeseman regarded both as *T. longifolia*. No specimen of *T. nemoralis* has been found, but the type for *T. purpureo-fusca* is at Kew (see overleaf).

I have examined plants fitting Colenso's description, from clay banks by Airlie Rd at Plimmerton, and plants Pat Enright showed me in dry gravel by Blue Rock Rd in southern Wairarapa, where they are smaller.

They are slender, 10cm tall in the dry to 25cm in damp habitat, grow in clumps, have a V-channeled slender leaf, with stems, bracts,



Thelymitra purpureo-fusca, drawings by Mark Clements at Kew: sepal and labellum.



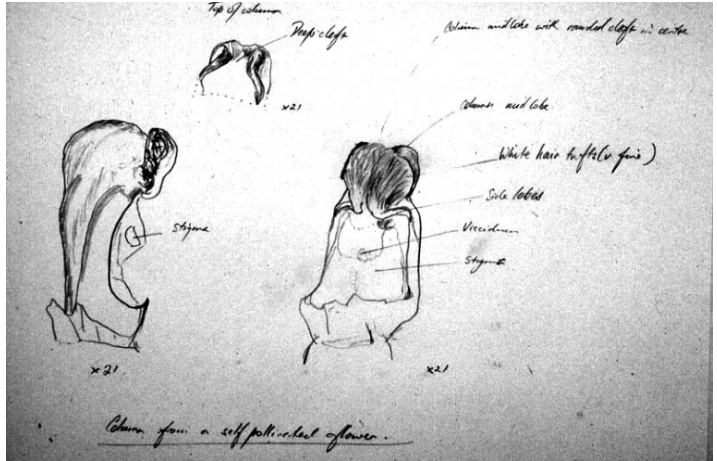
Thelymitra purpureo-fusca Colenso, Type sheet at Kew Herbarium

Drawings of the column by Mark Clements →

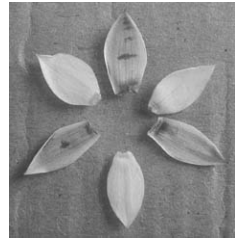
buds and leaves dark purple, and white to pale blue to pink sepals and petals, the sepal backs purple with a white edge; the column pink, midlobe notched, dark brown, edged with yellow, the cotton-ball cilia extending above it, the stigma bilobed below and trilobed above, the pointed anther-cap awl-shaped.

There are differences from Colenso's description: the plant is thicker-stemmed, the pedicels shorter, the cilia hardly taller than the column midlobe, the tip of the anther-cap rather short. Nonetheless there are many similarities, and this is a consistent form in the *Thelymitra* aff. *longifolia* aggregate.

"*Fusca*" suggests "dark" — "*obfusca*" means to darken.

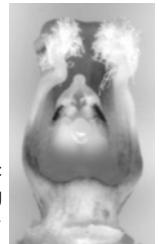


→ "...sepals ... sub-ovate-acuminate, much concave, dorsal one largest, the two laterals with a long mucro; petals ... elliptic-oblong, obtuse, broader than sepals; lip the smallest"



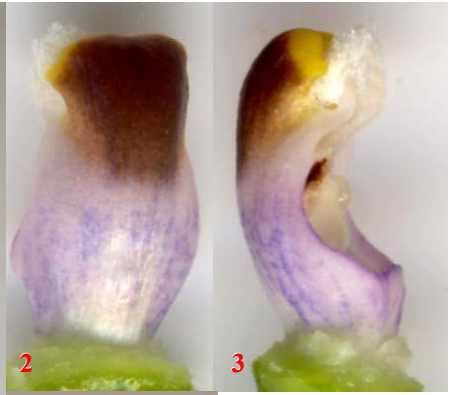
← "Leaf narrow, 1 1/2 - 3 lines wide, 7-10 inches long, thickish, channeled, glabrous"

"... column... anterior base slightly erose; stigmatic gland ... bilobed at base, trilobed at apex including rostellum; anther very acuminate, tip subulate" →



Key to colour photographs page 9 (in Colenso's words)

1. "raceme 3-5-flowered (occasionally only one); flowers rather distant, bracteolate on long slender pedicels; perianth 1/2 inch diameter; sepals dark purple-brown edged with a bright green line, a yellow central stripe and broad white exterior margins, sub-ovate-acuminate, much concave, dorsal one largest, the two laterals with a long mucro; petals light pink, sometimes white, elliptic-oblong, obtuse, broader than sepals; lip the smallest"
- 2, 3, 4. "column pink dashed with blue, apex stout, much emarginate, incurved, dark and edged with bright yellow (as in *T. nemoralis*), but the plumose appendages are more produced and rise above the column"
- 5., 6. "The whole plant exceedingly slender, of a dusky purple-brown or purplish-red colour Scape erect, very slender, almost filiform, bibracteate, 8-10 inches long".



Is this
Colenso's
Thelymitra
purpureo-
fusca?





7



8



9



10

Burnt Orchid (Orchis ustulata L.)

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Most of us involved in the study of our native orchids nurture a private passion for one particular species, and in my case it is for a charming and diminutive species, the Burnt Orchid.

Burnt Orchid (Figs 8-10) is a plant of tightly grazed chalk and limestone grassland, with a range from south-east and south-central England northwards to the Dales of Yorkshire and Durham. Most populations are small. However, on a few areas of the South Downs of Sussex and the chalk hills of Wiltshire and Hampshire it can be seen flowering in thousands in the short turf.

I first found it in Kent in 1953, but now I can enjoy it every early summer, living as I do in Sussex close to one of the largest populations in Britain. This is on an ancient hillfort on the Downs, and produced over 6000 spikes in 1992 - a wonderful sight.

Most Burnt Orchids are small, usually 6-7cm high, with a rosette of broad leaves bearing prominent veins and several sheathing stem leaves. The bracts are reddish, and about half the length of the ovary.

The flower spike is dense and cylindrical.

Key page 10

Fig.7 (see "The Column" p15): *Singularibas* "aestivalis" with burgundy veins which have spread to cover almost the whole leaf. Disk papillae were present but show only as an indistinct reflection of the photo-flash from their rounded tips.

Fig.8: (see British orchids, above) *Orchis ustulata*.

Fig.9: *Orchis ustulata*.

Fig.10: *Orchis ustulata*, late flowering form.

The unopened buds are dark reddish-brown, so the top of the spike looks burned - hence the common name. The outer and upper perianth segments form a tight hood above the pure white labellum, which has two rounded side lobes and a central lobe forked at the tip. The labellum is marked with bright crimson spots. As the flowers mature the pigmentation of the hood of the lower flowers fades almost completely, so they become white.

A late-flowering subspecies has been described in several countries in Europe, and the morphology described. However, this does not work in Britain, where I have found both Continental forms on the same flowering spike, so our British late-flowering form may require a new status and name.

Occasionally one finds plants with unmarked labella and straw-coloured hoods. One extraordinary population in Hampshire grows in a series of damp meadows. There the flower spikes are all 15cm or more in height.

Pollination is effected by a large fly *Tachina magnicornis*, but seed set is poor.

Over the years I became aware that, although most populations flowered from mid-May to early June, I was finding the odd few plants coming into flower in July and throughout August, when the early form had set seed and vanished off the face of the earth. The late-flowering plants never grew where the early form was to be found, and furthermore they looked different. The red colour of the hood remained red, even when all the flowers were fully opened. The labellum was more stubby, with shorter lobes, and the spots were blotches rather than discrete spots. Most striking was a deep rose-magenta flush on the edges of the labellum, which sometimes suffused the entire surface. We now know of 16 sites for this form in Sussex, four in Hampshire and two in Wiltshire. Working on herbarium sheets in museums, I have found specimens of plants flowering in July and August dating back as far as 1870, so it is not a new phenomenon.

Most populations are small, but one in Sussex regularly holds 1000 flowering plants.

The Burnt Orchid is a threatened species and populations have declined by 80% throughout their range, having gone from 210 of the 285 ten kilometre squares where it had ever been recorded. Most colonies are small, numbering a dozen or less, and are highly sensitive to grazing pressure, refusing to flower if the grass is too long but also suffering if overgrazed. Mature plants take some 16 years to grow from seed, flowering several times over the next decade. Late spring frosts can depress flowering in any one year.

Careful management of nature reserves and by sympathetic farmers has stabilised some populations, but even in these cases there is little evidence of spread or recolonisation of apparently perfect habitat nearby. Chalk and limestone grassland does not take kindly to summer drought, so it remains to be seen how this little gem of an orchid will respond to global warming.

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Leicester Kyle wrote, "This has been a good season for *Calochilus paludosus* here, and I've found several good specimens. Every now and then I enjoy regarding a plant as an aesthetic object... To switch from the scientific to the artistic is an interesting thing to do."

Calochilus paludosus on Millerton Moor

We found you
On the Old Stockton Road,
where it rounds the spur
and the pakihī parts
to let in the light
on thin rush sour mud
and scraps of Lycopodium.

You flare red—
sun on your iridescence,
carnelian,
four bracts on a slender stem,
a short thin leaf at the base,
and two flowers.

The wind has made no scar
on you,
no burn nor bruise
on symmetry and grace,
no mark of force;
and the flower

*a poem a song a brilliant
Byzantine gem.*

So much brilliance
for something hardly seen;
your arms reach out,
your beard invites—

charms for the transient;
courted by moths
for a day or two,
and done.

Leicester Kyle

1. *Singularibas oblongus*/ “*aestivalis*” burgundy

Andrea Bradon, DoC Hamilton, was on the case for conservation of critically endangered *Linguella puberulla*, bravo! She had enrolled the assistance of John Smith-Dodsworth and the Column to show her known sites around the Webbs/Billy Goat Tracks loop in the Coromandel Range on 10 November. For the record, the trio located 101 plants with about 15 in flower, many of them already spent.

The Column already had “boring old” *L. puberula* on film so he concentrated more on the abundance of *Singularibas oblongus* and *S. “aestivalis”* thriving in the shady moss along Webbs Track. The orchids were most conveniently growing up the bank, often at eye level so examining their inner papillae with the 20X lens was a pleasure compared with lying on a muddy forest floor, as is usual.

Let us divert for a moment or two, to bone up on the background of these two taxa.

Hooker’s original *Nematoceras oblonga* [1, 2 p29] had “*Lip* . . . blood-red purple with transparent edges” and no mention of “dentiform papillae” on the disc.

Eleven years later, in his Handbook, Hooker revised the same orchid to, *Corysanthes oblonga* [3 & 2 p66] stating “*Lip* . . . deep blood-red; margin pale”, and still nothing about disc papillae and no sign of them in Fitch’s included drawing, J76:33.

TF Cheeseman [4] in 1925, under *Corysanthes oblonga*, included, “centre of the disc with minute dentiform papillae” or in English, tooth-like pimples. So he had inadvertently switched taxa, hadn’t he?

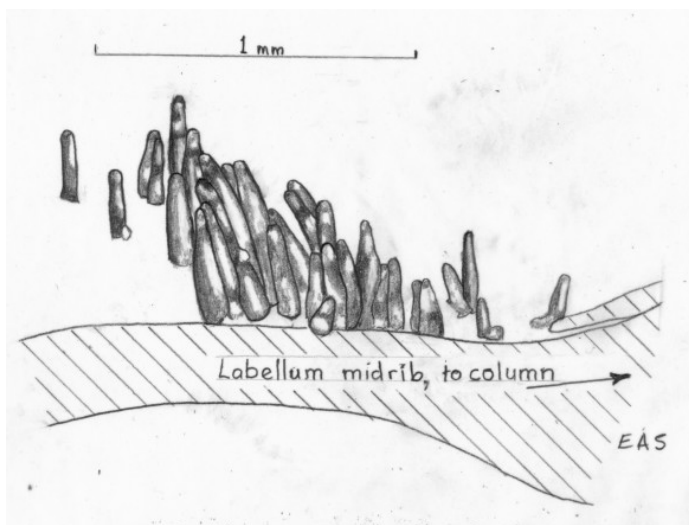
HB Matthews, in his 1928 manuscript, [J61:16] quite rightly stayed with Hooker’s original, ignoring Cheeseman’s switch by describing *Corysanthes “aestivalis”* where he wrote, “*Labellum* . . . blood red . . . the wide fimbriate border of various colours, expanded, . . . lamina for half way up the orifice, more or less

papillose.” Notice that the labellum margin is not “transparent” as was Hooker’s *Nematoceras oblonga*.

Moore and Edgar [5] stuck with Cheeseman’s error and also described Matthews’ *Corysanthes “aestivalis”* under the classification *Corybas oblongus*, by including, “*Labellum* . . . with a wide circular mouth . . . short, retrorse hair-like calli, numerous near mid-line on inner surface.” Retrorse, meaning hooked over, tells the Column that the specimen(s) they had must have withered because those “hair-like calli” are always straight and deepest purple in live specimens of *Singularibas “aestivalis”*. But the “hairs” are easily visible, with a 20X lens, by silhouetting them against the upright white column. Magnified, they are actually tapering towards rounded tips and up to 0.2mm long as in the figure overleaf drawn from a projected image of a sectioned flower from the Shenstone Block, Te Pahi.

Now that you, dear reader, have a sound grasp of what is meant by *S. oblonga* and *S. “aestivalis”* (as interpreted by the Column) let us return to the Webbs Track studies.

What the trio found could be described as absolutely chaotic! a complete mix of characters from both taxa. There were large round mouthed labella with a pearly transparent halo at the margin with regular fimbria and a long apiculus as in Catherine Beard’s drawing, J59:21, a bed of papillae on the disk for some and none for others. There were oval mouthed ones with irregular fimbria and no transparent halo yet with a prominent bed of papillae on the disk (and half way up the sides) for some and no papillae for others. Oh yes, and there were some *S. “aestivalis”* s.s. which HBM [J61:16] would have been proud of, with regulation “expanded” labellum mouth, irregular fimbria to a margin of irregular purple and white (HBM’s “border of various colours”?) and the essential bed of papillae. Then there were the standard *S. oblongus*



Dentiform papillae in *Singularibas* "aestivalis", traced from slide from Shenstone Block 11 Sep 99.

Hook. f. with oval opening and regular white fimbria on a transparent margin as well as a group of three *S.* "aestivalis" s.s. except for their burgundy leaves (Fig. 7 p10). Only alba and double flowered specimens were lacking in the Webbs Track multitude as before.

The Column has previously noted *Singularibas* with some swapped characters but never to this extent. The apparent rampant hybridisation does nothing to boost one's confidence in there being two distinct species or exactly what the parent species are. What do you think?

Side issue: have you noticed that *Singularibas* have lateral petals at the back?

unlike *Nematoceras* which invariably have sepals curling back at the base and standing up at the back. *Molloybas cryptanthus* also have tall petals at the back.

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Ruth Rudkin (Australia) wrote, "Firstly, this latest issue of the Journal is full of interest - scents, cheating, historical reprints and 'Science is debate' and so on. This last article spurred me to say how I felt about the **new taxonomy**. As I am most interested in relationships and orchid evolution the plethora of new names especially of genera are of little help. I also feel that there is little evidence to warrant so many changes. A change of definitions of genus and species would leave genus, species, subspecies and varieties which would make relationships clearer. It could help if in making a list of NZ orchid names, the alliances were in alphabetical order and the genera in each alliance then in alphabetical order. I am afraid I follow Phillip Cribb on the subject of the new taxonomy".

close relations: orchids like ours

*A Non-descript Plant growing in
Moist sandy places on Woodmans
hill near Hobart Town, Flowers in
Dec. and Jan.*



***Chiloglottis* sp.**

A hand-coloured copper engraving by Charles Bruce, from the 1833 edition of the *Hobart Town Almanack*, published by James Ross. Bruce, a convict assigned to Ross, was an illustrator and engraver whose work appears in several editions of the *Almanack*.

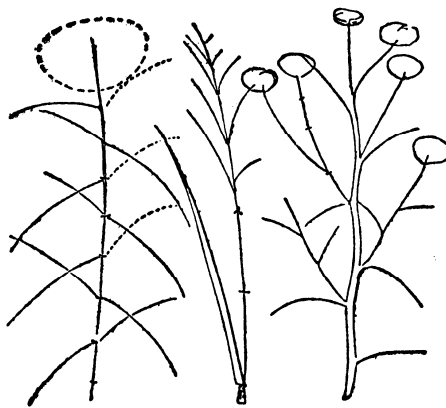
The plant resembles *C. formicifera*, but that species is not one of the eight *Chiloglottis* species listed for Tasmania by Jones (*Australian Orchid Research* 3, 1998).

We are grateful to the Tasmaniana Library, State Library of Tasmania for information and permission to publish the illustration.

historical reprint—botanical drawing: 2

This is the second part from Walter Hood Fitch's articles first published in the Gardeners' Chronicle, 1869.

Stems.—In the straight stem there is always some degree of curve, therefore, the ruler should never be used; it is the last resort of those unable to make "straight strokes" and is only worthy of schoolboys. It is more difficult to draw parallel lines, and the best practice is to sketch grasses or long-leaved plants. Leafy stems or branches should be first faintly outlined their whole length, of their proper thickness, so that the drawing may occupy a well-balanced position on the paper. Then mark whence the leaves spring. It is also desirable to note the shape of the stem, whether square, round, winged, etc. The slight sketch below will show the advantage of proceeding thus cautiously, and will enable every leaf petiole to have its proper point of attachment, whether visible or not.



A. The stem

Leaves.—If the leaves are more or less erect in relation to the stem, sketch the lower ones first, as a guide for those above, as in the left-hand cut in the following sketch (Fig. B.).

If reflexed, commence with the upper leaves, for the same reason. If done thus systematically, there will be a great saving of time and indiarubber.

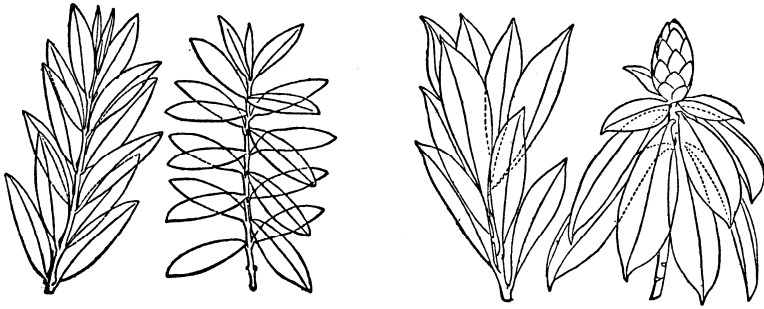
Opposite leaves are best shown slightly askew, but if the stem is branched, the leaves on some of the branches should be more or less foreshortened, for the sake of variety.

Outline large leaves faintly before sketching them decidedly, and that should be done with one stroke of the pencil, and not with repeated touches, unless the leaves are woolly, when an indefinite outline is advisable. It is better to put in the midrib first, and it should always have some degree of curve, however stiff the leaves may be—leaves are very seldom so rigid as to have none; then mark whence the veins spring.

In serrated leaves it is safer to put in the serrated outline before doing the veins; and, in cases where the latter terminate in the points of the serratures, commence the veins at the points, and they are sure to terminate properly.

In lobed leaves, after faintly indicating the lobes, put in the ribs and veins first, and the outline of the lobes, particularly if they be toothed, will be found much easier. In digitate leaves, indicate the petiole and midribs first, the relative position of the leaflets can be kept with greater certainty. In pinnate leaves, when large, after faintly sketching the rachis and the points whence the leaflets spring, put in the midribs just, and define the leaflets last; if the pinnate leaf is small, this is unnecessary.

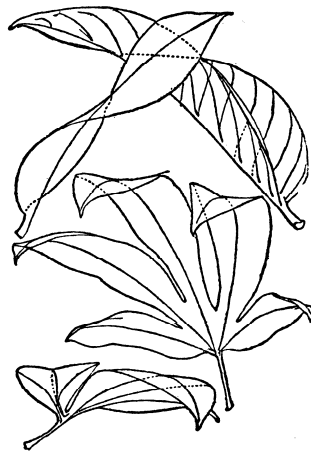
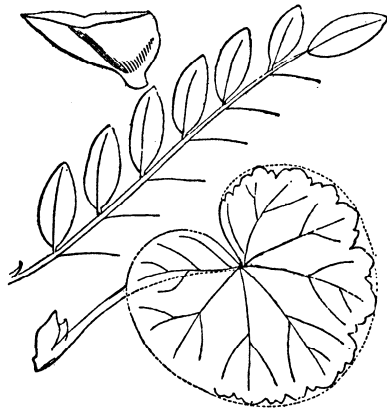
Leaves in Perspective.—Leaves have been subjected to more bad treatment than perhaps any other portion of the vegetable kingdom; they have been represented, or rather misrepresented, in all kinds of impossible positions. Numerous are the tortures to which they have been subjected: dislocated or broken ribs, curious twists, painful to behold—even their wretched veins have not escaped; and all these errors in perspective arise from inattention to the simple fact, that in a curved leaf, showing the under side, the midrib should be continu-



B. Leaf growth



**C. Serrated,
pinnate and
lobed leaves**



D. Leaves in perspective

ous, and the veins should spring from the midrib. The simple way to avoid perpetrating such vagaries, is to treat a leaf as if it were skeletonised, and I would recommend skeletonised leaves as admirable subjects to illustrate their own perspective. A little study of them in this state would be beneficial to those who are wont to take unwarrantable liberties with them when rejoicing in their summer garment of green, which veils their curious anatomy.

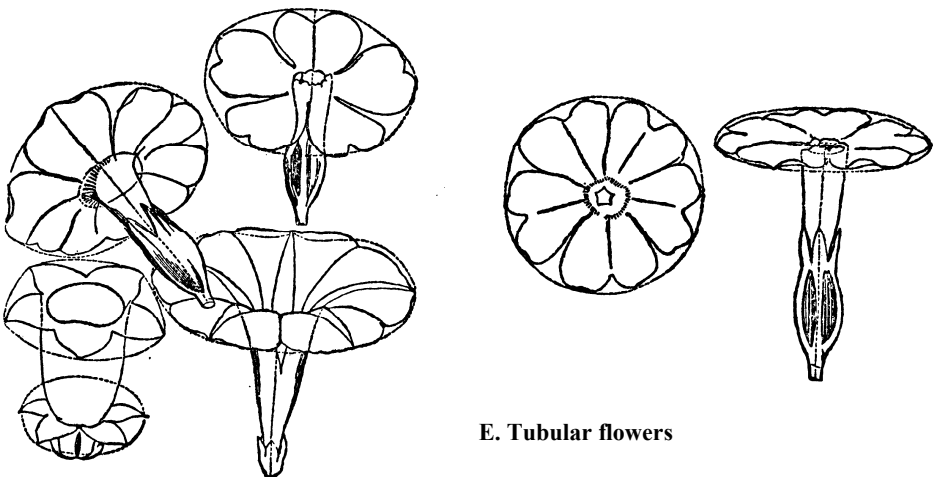
In representing leaves in perspective, then, the first faint outline will be found of the greatest service, and in making it, the leaves should be treated as if they were skeletonised, i.e. continue the outline through the curved portion of the leaf. Here I may impress upon the ready the importance of noting the angle formed by the veins with the midrib, their respective distances apart, their faintness or prominence. It is also useful in drawing for scientific purposes, to represent a leaf cut across, to show the thickness; but that is chiefly desirable when it is leathery or succulent. The cuts in Figure D will illustrate these remarks.

Flowers.—Flowers are often considered the most difficult parts of the plant to sketch; but such, I think, is not really the case, their perspective being more evident and less varied

than that of leaves whose positions are almost infinite.

The most common error perpetrated is that of not placing the flower correctly on its stalk or peduncle, but with its neck dislocated as it were, thus imparting to the sufferer an air of conscious comicality. To avoid this infliction, in making the first sketch prolong the stalk or axis through the flower to the centre, whence the petals or divisions may radiate correctly beyond a doubt. Another common fault is to represent them all pointing in one direction; sometimes this may occur in Nature, but it is not artistic to copy it in every case.

For scientific purposes it is desirable that positions should be as varied as possible, so that at least a front side and back of a flower be exhibited. A third error I may also allude to, and it is one very common in drawings made from dried specimens for scientific purposes—I have often seen otherwise correct and beautiful plates marred by it—viz., the representing all or most of the flowers in a panicle or mass, with one particular division of the corolla directed towards the spectator; such uniformity is too mechanical to be natural. As good a flower as any to commence with is a Primrose, and for a mass of flowers

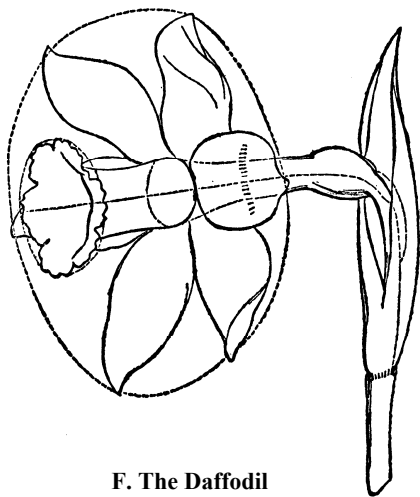


E. Tubular flowers

the Polyanthus or Oxlip, as in these cases they are presented to the eye in various positions.

For the front view a faint circle should be pencilled, the centre and corolla indicated, and then sketched in as firmly as is desirable. If the drawing is to be coloured, the outline and veins, if any, should be strong enough not to be quite obliterated by dark colour.

In a side view the tube should be properly adjusted to correspond with the throat or eye; the simplest way to do so is to carry the outline of the tube faintly through to the centre of the flower, as in the foregoing cut. In a position showing the tube foreshortened, or in a back view, the same method should be adopted as shown in the above illustration. Tubular flowers are often sadly treated by draughtsmen; take, for instance, the common Daffodil, in which, if lines were drawn round each centre, they ought to be in the same plane. The next sketch will better explain my



F. The Daffodil

meaning.

It is one of the most difficult flowers to sketch correctly in its natural position, and the best way to test correctness is to turn the paper, so that the flower be erect, when the bad



Bruce Irwin's orchid paintings

We were so thrilled to see the paintings Bruce provided for the proposed new page in the Journal that we decided to publish them all at once instead. This new NZNOG booklet has 44 pages including 36 full colour reproductions of exquisite watercolours of NZ orchids painted during and after WWII by NZ's greatest native orchid artist.

Act now! as our margin is slight, only enough copies will be printed to fill orders received with payment by 15 April.

**This will be a collector's item.
To secure your copy,
send \$32.50 (includes p&p)
before 15 April to the editor.**

Petalochilus species: red lips of Fiordland

by Kelly Rennell, Invercargill

During January 2004 Sid Smithies and I were blessed with a visit from Eric Scanlen who had come to sort out our local *Gastrodia*.

On 18 Jan Sid had to catch up with his chores and prepare for the next trip so I took Eric to Lake Hauroko area on the edge of the Fiordland National Park and he asked what we might expect to find. My reply was *Earina mucronata* & *E. autumnalis*, *Winika cunninghamii*, *Drymoanthus flavus*, some *Thelymitra*, some *Gastrodia* and redlips. Eric queried the term redlip and I explained it was an upright green stem with a very slender leaf about 2mm wide and 100 long. The slender stem carries 1 or 2 small white flowers that have red barred lips. "Labella" says Eric and "have you any photos?"

The photos I showed him were of *Petalochilus minor* and a red stem specimen that Eric called *P. "Red stem"* [J66pp23, 26 (Fig 17 page 26) a 2-4 flowered taxon reported only from the Puffer Track Kaitoke to date.

Some light showers fell on the way to Lake Hauroko but I had promised Eric a fine day and it was just right especially for the sandflies. As we drove through the beech forest the sun came out and apart from some damp foliage conditions were very pleasant. We walked the track down to the tree where I had found the pale *Gastrodia* "Shauroko" reported in Journal 87 p27 but it was not there this year. There were many *Pterostylis* plants that had finished flowering and set seed also the leaves of large areas of *Nematoceras trilobus* agg that had also finished flowering here on the ER 77/72 boundary

Moved down to the car park at the lake edge where the sandflies were more active and headed along the track to the NW. Spotted a *Gastrodia cunninghamii* which had finished flowering and set seed about 35 seed capsules on a 600mm stem. Climbing a slight rise past

the first creek we found *Winika cunninghamii* on a fallen tree in abundant flower. Some flowers were without the usual purple side lobes to the labellum but most were normal. Possibly there were several plants there.

Adenochilus gracilis was common in the vicinity with many seed capsules present.

We found several *Petalochilus* stems were in capsule some with red stems but mostly green. Several of these red stems had red ovaries with green stripes, which Eric put down to a form of Bruce Irwin's *P. aff chlorostylus*. Eric then found 2 spent flowers which clearly showed the toothed midlobe of *P. minor* with the red bars across the labellum. The best part was the trapped sandfly among the calli. This had to be photographed much to the delight of the living sandflies, which were just waiting for anyone who was not paying full attention to squashing them as they landed.

While Eric was getting his 3-D photographs I found three separate plants with fresh all white flowers. (Fig 18). This got Eric even more excited. He explained that this was a species without the red barred labellum called *P. nothofageti* not previously reported south of Christchurch and we had found it. It was growing in moss clumps among fallen beech logs and scattered ferns. The plants were 100-150mm tall with one white flower, leaves 2.5 x 150mm pale green and hairless, one slender green bract, a third of the way up the stem. More sandfly feeding as more photographs were needed but eventually we were able to move on again after I had mastered Eric's demands for increased depth of field with minimum aperture, flash, a close up background and reflectors to light up the shadows. It was notable that all *P. aff chlorostylus* (?) were spent; *P. minor* fading and *P. nothofageti* were still fresh.

Back to the car park and then southeast along the shore to see the *Drymoanthus flavus* growing on the beech trees on the edge of the lake. Sid and I had previously found some half dozen plants in bud end of September and flowering 7 November. The flowers were finished but there was one healthy seed capsule to be photographed.

On the way to the *Drymoanthus* we found further *G. cunninghamii* but all had finished flowering and had set all capsules, all upright. Further down the track I found two tawny stems of *Gastrodia* in bud, which had recently emerged, and which we suspect to be *G.* “long column Holt” found at Holt Park Otautau by Sid Smithies [J87 p27] and later in Anderson & Queens Parks in Invercargill. Usually under Rhododendrons, sometimes in open bark gardens and sometimes emerging from Ericaceous ground cover. If these are *G.* “longcolumn Holt” they are the first specimens found away from the park environment. We will have to return when the flowers are open to confirm the I.D.

The following day was again brilliantly fine; Sid took Eric and me deeper into the National Park to the Grebe River right down to where it flows into Lake Manapouri. Many things were seen but that will be another story except for the finding near the lake of some fresh *P.* aff. *chlorostylus*. Red barred labellum, two rows of calli on the mid lobe and many calli on the margins of the midlobe. The final feature was the presence of sessile red glands on the back of the dorsal sepal. More sandfly feeding and photographs but the pictures were worth the blood donations.

On 23 Jan 04 Sid, Eric & I headed out in Sid’s 4WD to Slab Hut in ER 72 north of the Borland road on the west bank of the Waiau River. On the way in we were treated to the rare sight of a family of three sparrow hawks *Falco novaeseelandiae* sitting on adjacent fence posts. They stayed until Sid was able to get some superb photographs from about 15m.

Along the bank of Slab Creek I found several *G. cunninghamii* as usual in capsule and also 3 in bud *G.* “longcolumn Holt” (?) in

moss covered ground under beech. Another site to revisit soon. Also Eric found one fresh flower of *P. nothofageti* this time with the midlobe properly curled under as in the *Field guide* illustration. This was Sid’s first rapt look at the species so he had to add it to his collection of Digi photos.

Sid was not so pleased when his 4WD refused to start for our return. Only 9 km from the nearest road and 50km from the garage. Eric & I knew it was serious when Sid claimed the bottom bunk nearest to the door as his for the night. We had to walk for ½ a km to get cell phone coverage. Several cell phone calls later and after following his mechanics instructions on what size of spanner to hit the fuel pump with it sprang into life and we headed home with great relief.

At Sid’s we amazed Eric with photographs taken in the area of *Stegostyla* aff. *alpina* “red lip” (Fig 19) taken 19 Dec 02 among manuka scrub alongside the track to Slab Hut. Which he assures us is unreported to date.

He now wants to return.

Mt Holdsworth midJan.

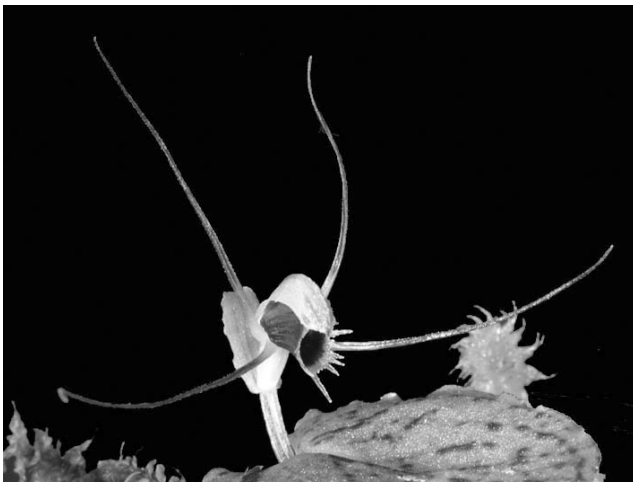
18 January I decided to have a look for the pink-cilia *Thelymitra hatchii* I mentioned in a past journal. It was a fine hot day, and the *Winika* (none showed any purple) was in full bloom. *G. cunninghamii* (black, green or fawn) was setting fruit, *Petalochilus* was over, as were *Aporostylus*, *Adenochilus* and *Singularibas* (*Corybas*) *oblongus*. Two seedheads rising from leafless bases proved to be *Molloybas* (*Corybas*) *cryptanthus*, a new record for this area. *Earina autumnalis* was in bud. Near the treeline typical *Thelymitra hatchii* was in full bloom—several flowers open on one stem. A couple of metres away smaller plants, 1-2 flowers each, showed the mauve cilia peculiar to this track. There are minor differences in the column, but I do think this is just a colour variation. I have wondered if it is Colenso’s *T. concinna*, but it doesn’t really fit his description (Figs 20, 21) —*Ed.*

notes, letters, news, views, comments

Dan Hatch wrote (11 Nov),
“1. *Diplodium brumale* – *Pterostylis* is feminine, *Diplodium* is neuter. The specific name is therefore *brumale*, not *brumalis*. This is not a matter of opinion, but of grammar.
“2. *Pterostylis agathicola* without kauri – many years ago I commented on this species, ‘There is no apparent connection between these orchids and the kauri. The fungus (could it be perhaps the *Endogene* which forms the nodules on the kauri rootlets?) is stimulated by the piled up decaying debris, while the orchids respond to the combination of the abundant fungi and the easily penetrated, moisture retaining layer of leaves, twigs, moss and shattered cones’. Graeme Jane’s excellent article on these orchids in the Kaimai Ranges confirms this. The orchids are not growing with the kauri, but with the fungus, which in most cases lives with the kauri. In the Kaimais however, the normal association seems to have got out of hand. The *Pinus pinaster* (*Endogene* again?) must host the required fungus and consequently the orchid. *Where the carcass is, there shall the eagles be gathered together*. Nothing is in fact impossible, only unlikely.”

Sid Smithies of Southland emailed photographs of several *Nematoceras* taxa for possible identification. There were members of the *N. triloba* agg. from Pourakino and Moore’s Reserve (“the Moore’s had almost finished flowering when I found it [7 Nov], then I found the Pourakino a week later and it was just starting into flower; they both have flowers of a similar size and they are the biggest I have seen; in fact I thought it was only a colour difference because to my untrained eyes the flowers looked very

similar”). There were also photographs of (in my opinion—Ed.) *N. macrantha* from Pourakino, and *N. “Trotters”* from Dunsdale (10 Nov), and one of the southern *N. iridescens* (see colour page). Sid’s colleague Kelly Rennell also emailed photographs—the stunning shot of *Singularybas oblongus* from Lake Hauroko shown below, and the first *Pterostylis* to flower in that southern region (10 November): it has the flat lateral sepals of *P. montana*, as well as the flattish oval stigma that clearly separates it from the small bronze-coloured taxon with the bulbous stigma. Is this the true *P. montana*? (see Figs 11-16 opposite).



Kelly Rennell’s shot of *Singularybas oblongus* at Lake Hauroko.

Figs of southern orchids →

- (11 is Kelly Rennell’s, 12-16 Sid Smithies’s)
11. Earliest *Pterostylis*—→*P. montana* s.s.
12. Pourakino: *N. macrantha*, wide dorsal sepal often seen in southern forms.
13. Dunsdale: *N. “Trotters”*.
14. *N. iridescens*.
15. Pourakino: *N. triloba* agg. taxon.
16. Moore’s Reserve: *N. triloba* agg. taxon.



Southern forms
of *Nematoceras*—
photographs by
Sid Smithies



John Groom wrote (4 November), "On a recent tramp into the hills back of my house at Matata I found *Caladenia* for the very first time. I had my 10 power magnifier and succeeded in getting most of the 22 trampers to belly down to examine them. Lots of oohs & aahs. When I got home I checked with the *Field guide* also the *Nature guide*. I believe they were *C. aff. carnea*. However Eric believes they were *C. bartlettii*, and not recorded from Matata previously. Whichever, I was thrilled to find them - 5 in a group - as I have tramped that track 50-100 times and never seen them before. I had to break off and return but the rest of the group continued and located another patch. I hope to get back there again soon as its only an hour up the track into the reserve which starts at my house - but quite a stiff climb".

The 5th Australasian Native Orchid Show will be held at the Campbelltown RSL Club 16-19 September 2004, sponsored by the Australasian Native orchid Society Macarthur Group, 40 Carrington Circuit, Leumah, NSW 2560. Contact them.

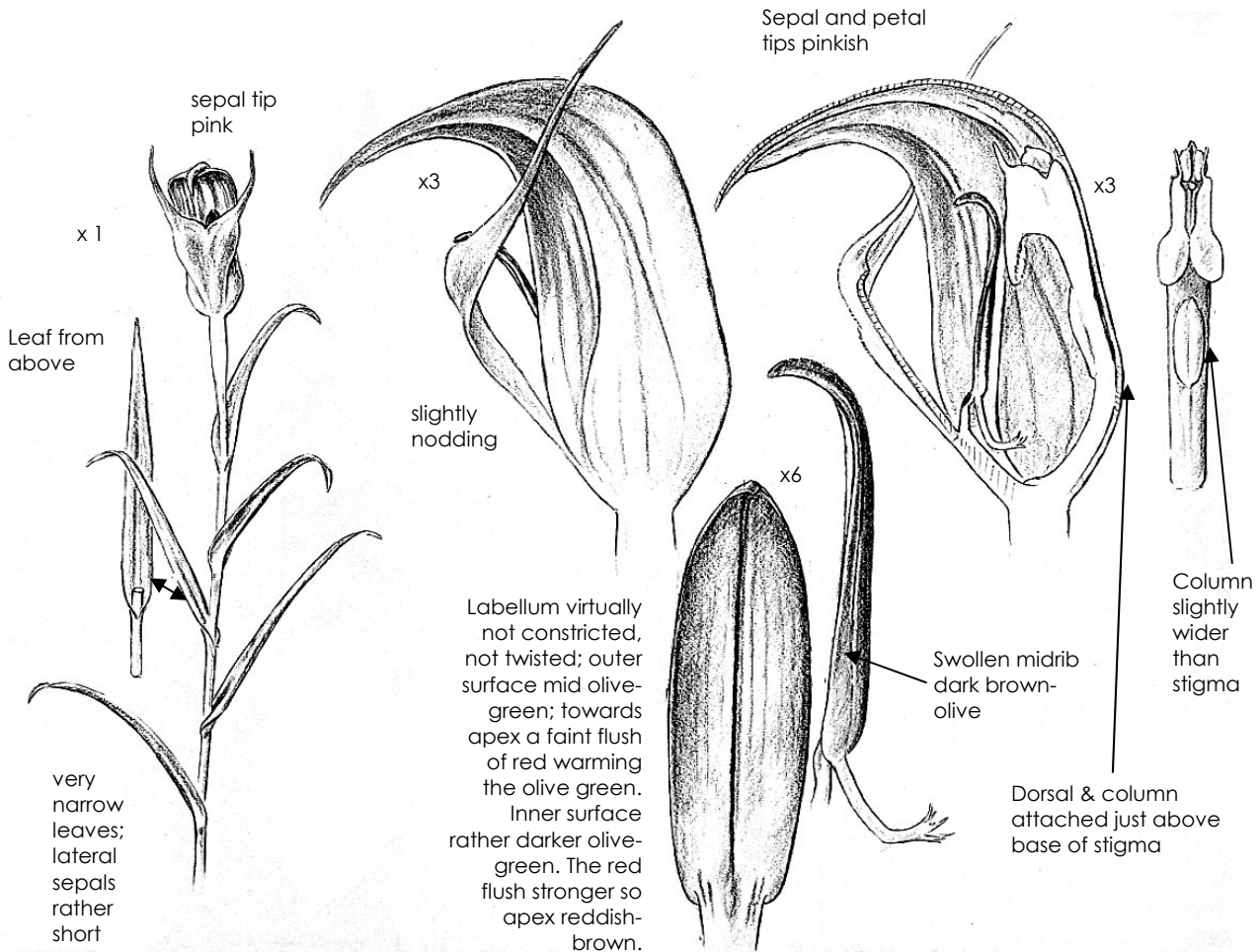
Gordon Sylvester wrote (23 Nov 03), "I was asked to look at a 'small' orchid growing an elderly neighbour's property. As it was in flower and as I had looked at it some 2 years ago I decided to go and photograph it for the record's sake. I found a small colony growing happily among some garden daisies and viola type plants. The colony, about 9 plants in all with a couple

outside the area and a couple of juvenile rosettes, was almost all spent with one plant still in good condition. So I photographed this plant and then collected the flower for detailed analysis photos. The reason for this was the colour of the exposed labellum: almost black with a black/brown raised central rib. On opening it up I found to my surprise the same characters as I found with *Pterostylis* 'peninsula' found last year on the Brunner Peninsula Lake Rotoiti. Also flowering November but a week early. Several close-up photos were taken of the base of the labellum and its process. On looking at the map I noted the two colonies were separated by 40km. The colony on the Tadmor Hill at an altitude of almost 300 metres, the same as those at Lake Rotoiti. Now the problem is to see if there are any in between these two locations E.R. 47 Nelson as well as ER 49 Spenser. A short walk about 50 metres away disclosed *P. banksii* in full flower along with *Nematoceras triloba* but no flowers were visible in this species at this time. But there were indications there would be flowers a little later".

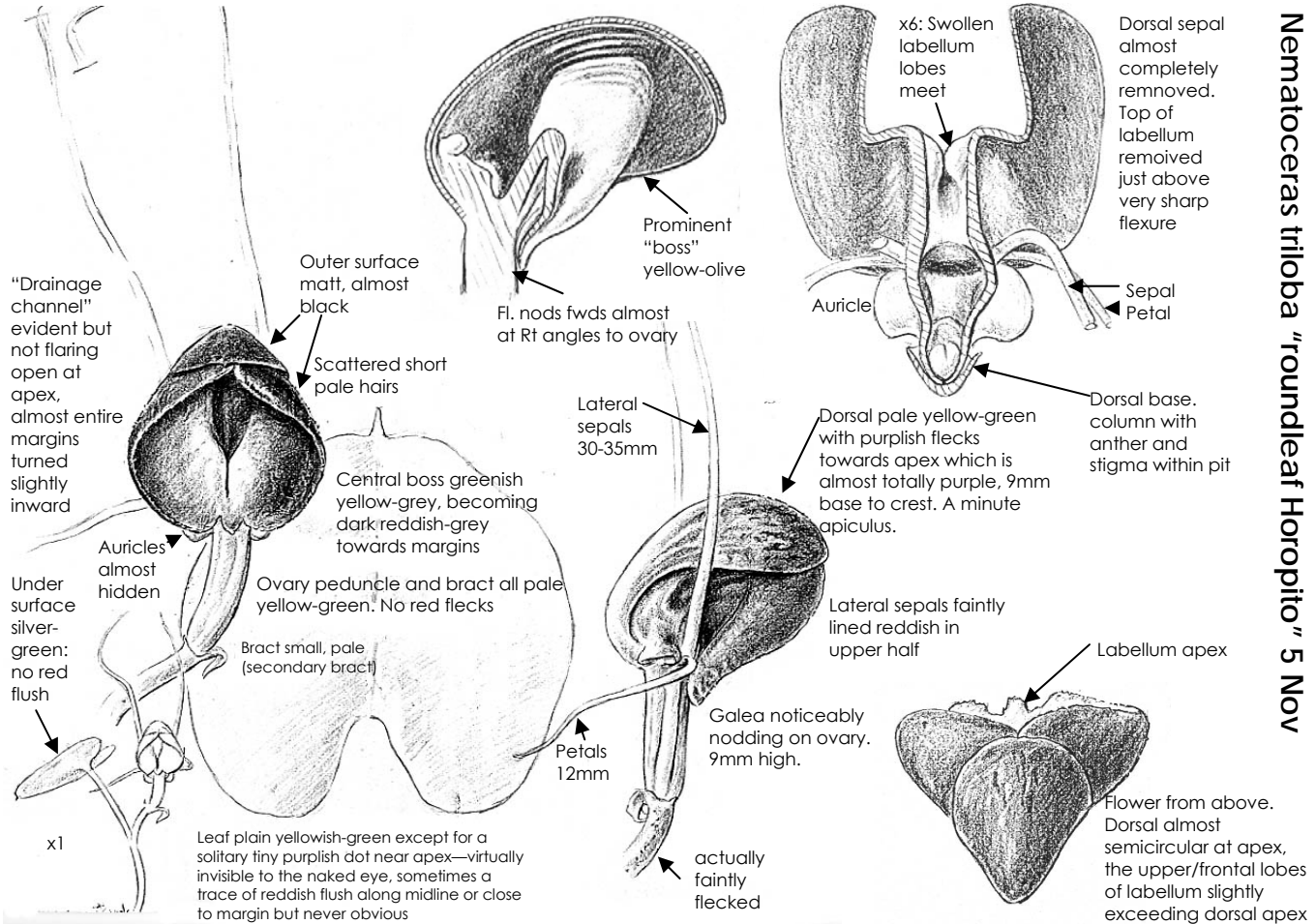
Bruce Irwin wrote (15 Nov 03), "I'm enclosing photocopies of two recent drawings. One is a form of *Pterostylis aff. montana* (or is it?). The labellum shows none of Dan Hatch's 'uneven constriction' nor does it show any real twist. It came from the Mangakahu Valley about 2km upstream from Anne Fraser's house. It is the first of the complex to flower there." He went on, "The second drawing is of a tiny form of *Corybas trilobus* "roundleaf" from Crash Palace, Horopito. Plants at Erua also show the strongly nodding stance of the flower and may be the same, but other forms at Whakapapa and Rangataua have flowers more or less erect on the ovary, and the dorsal sepal varies in shape, sometimes rounded and truncate, sometimes markedly tapering" - see pp26-27 overleaf.

Figs
 17. *Petalochilus* "red stem".
 18. *Petalochilus nothofageti*, Southland.
 19. *Stegostyla aff. alpina* "red lip".
 20. *Thelymitra hatchii*, yellow cilia.
 21. *Thelymitra hatchii*, mauve cilia.

First form to flower of *Pterostylis* aff. *montana*,
Mangakahu, Ongarue, 5 Nov 2003.



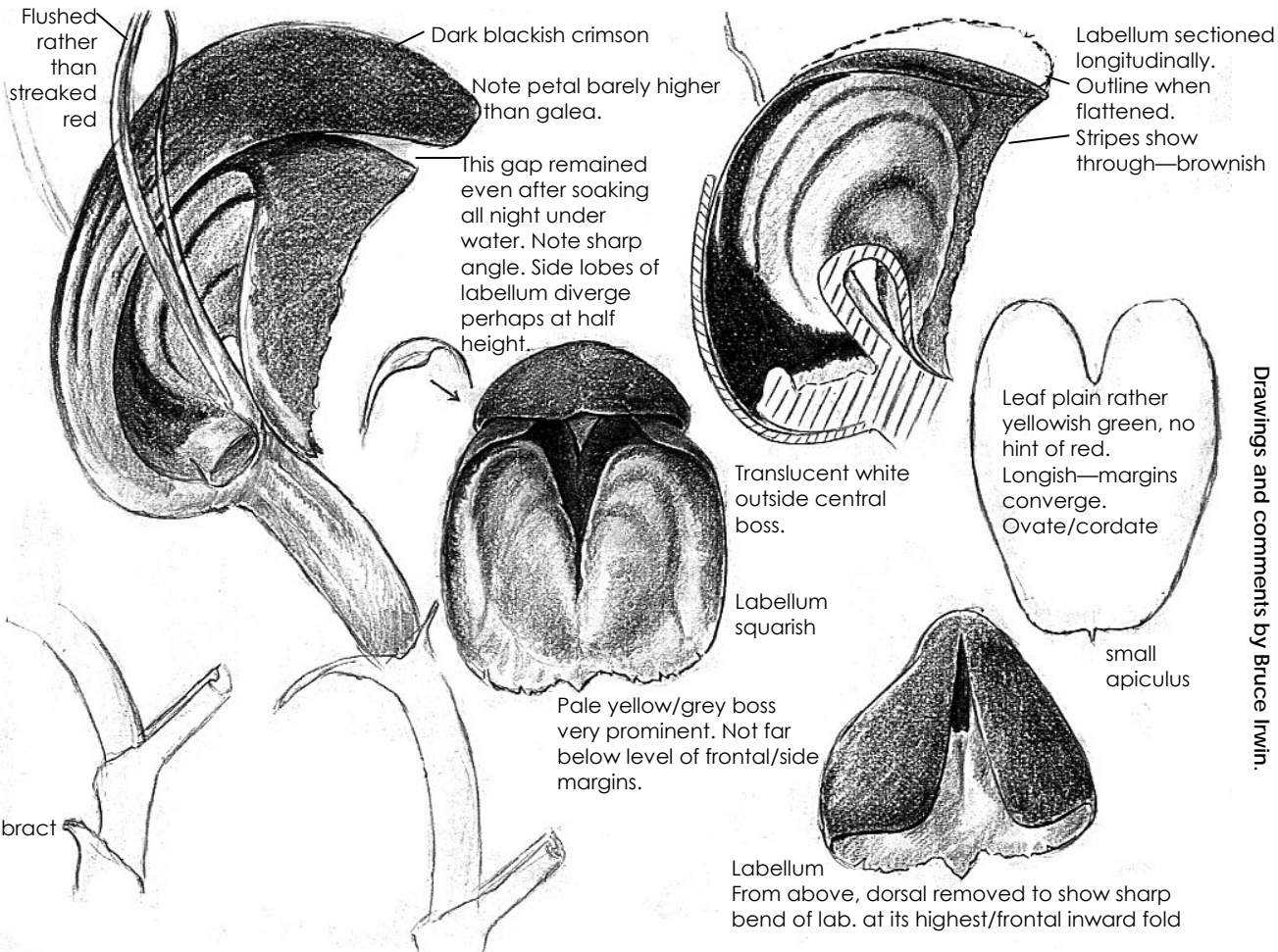
Nematoceras triloba "roundleaf Horopito" 5 Nov



Corybas trilobus ovate leaf "tussock" found by Gael Donaghy and

Graeme Jane c. 28 Dec 2004Mt Dunblane at 4000ft.

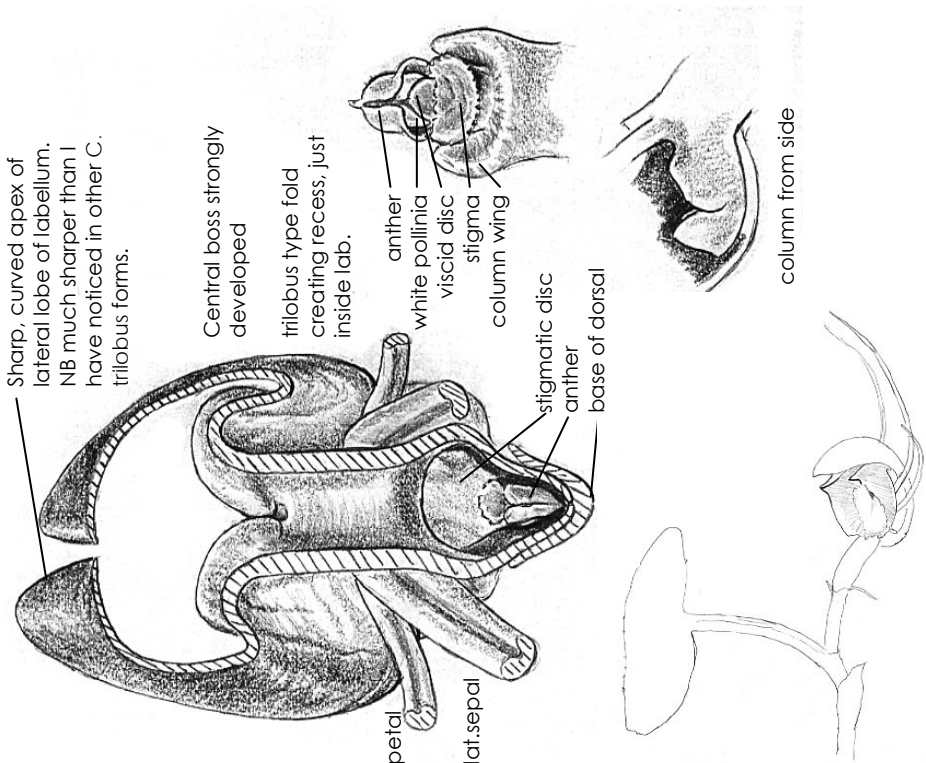
Drawings and comments by Bruce Irwin.



Gael Donaghy wrote, “Marlborough is not known for its Corybas, so when Graeme and I were looking at alpine plants in flower in tussock land at about 4000ft around Jack’s Pass, and started to find Corybas leaves, we were intrigued. They were in moss on a wet soak above a creek. A recently withered flower didn’t seem to fit our original diagnosis of *C. macranthus*, so the hunt was on! Eventually we found a patch, well hidden in tussock, further up slope, and were both surprised to find a *C. trilobus* looking flower. The tepals were very much shorter than normal, and the overall flower colour was a rather pretty wine-red, somewhat paler than most Corybas. However there was not one leaf in the thousands we saw that approached a normal “butterfly-shaped” leaf of *C.*

trilobus. This is the latest flowering *C. trilobus* I have found, although the altitude may account for this. It is also the first time we have found this taxon in the alpine zone.”

Bruce Irwin wrote, “Note (1) the dorsal sepal does not clamp down onto the lateral lobes of the labellum; (2) Those lateral lobes of labellum flare apart halfway up the back of the labellum; (3) Seen from the side the labellum has two forward-pointing rather sharp lobes; (4) the lateral tepals are comparatively short but stout; (5) the dorsal sepal is rounded and faintly emarginated at its apex; (6) The usual trilobus/macranthus recess above the floor of the labellum is not evident, perhaps disguised by darker areas. Easily seen when labellum cropped. The sketch projected from a slide”.



Pat Enright found a new colony of *Pterostylis porrecta* near Tawa at the end of November.

Kelly Rennell found a *Pterostylis* (Fig. 1) on Bluff Hill on 20 December. It appears to be similar to one I found at the roadside between Fox and Franz Joseph on 8 January (Fig. 2, 3). Mine was a large plant, the flower as big as that of *P. banksii* or *P. australis*, but lacking the long dorsal sepal of the former, and the broad leaves of the latter. It had wide-spread and deflexed lateral sepals, and the leaves were upright and narrow-acuminate. The stigma was long and flat, and had insect body-parts adhering to it—along with the forward-leaning habit of the flower, strongly suggesting insect-pollination. The more I see of the plants in this *banksii/australis/patens* complex, the less I am sure of what I am looking at: they seem endlessly variable!

Members of the Group send warm congratulations to **Peter de Lange** for his election to Fellowship of the Linnaean Society—a signal honour conferred on few NZ botanists, and a well-deserved recognition of his standing.

FOR SALE
The Orchadian

Jane Miller (janemiller@pnc.com.au, 25 Gregory Tce, Lapstone 2773, Australia, phone +61 2 47391190) has every issue of ***The Orchadian*** for sale, collected by her late father and husband. She would consider seriously offers made to her before the end of April.



Annual general meeting 2003

The AGM of the NZNOG was held at Iwitahi camp at 7pm on Saturday 13 December 2003.

Minutes

1. Twenty members and guests attended, and expressed gratitude to Robbie and Sue Graham for arranging and organising the weekend.
2. Brian Molloy, Don Isles, Ann Fraser, Claire Pullman and Graham Marshall sent apologies.
3. After some discussion the proposal "*That the NZ Native Orchid Group should become an incorporated society*" was passed by 14 votes to 6 against.
4. Ian St George was elected as Convenor.
5. Judith Tyler (Treasurer), Max Gibbs, (Secretary) Eric Scanlen and Brian Tyler, were elected as executive. The executive has the ability to co-opt, and members noted the concern that there was no South Island representation, nor any professional botanist.
6. The proposed rules were read and approved, with a change to rule 3 (c) to "The executive may appoint people to Honorary Membership, or to Life Membership. Such people will have made significant contributions to the Group's objects, and will have accepted their appointments in writing. Their rights and obligations are the same as those of ordinary members except subscriptions are waived in the case of Honorary Members".
7. The AGM is to be at Iwitahi or otherwise where the Group meets, between September and January.
8. The financial year will end 30 September.
9. The application for incorporation was signed by 19 members.
10. Max Gibbs spoke about the contributions made over 19 years by Trevor Nicholls, and about the Group's endeavours to recognise his huge contribution to native orchid conservation.
11. He also spoke about the Taupo Orchid Society's governance of the Iwitahi Reserve, and possible changes in the future. The NZ Native Orchid Group will help if required where it can. He mentioned a major financial grant the Reserve had received from Environment Bay of Plenty for weed control.
12. Chris Ecroyd spoke about the dismay people had expressed at the advent of the new generic orchid names, and his concern the Group would lose membership as a result. The journal editor agreed to print old generic names in brackets following new generic names.
13. Judith Tyler told us only two members had expressed an interest in an email journal, so this idea is to be dropped.
14. Ian St George outlined discussions with Kingsley Dixon, Chris Ecroyd and Max Gibbs about trying to attract a postgraduate student to undertake studies of NZ orchid mycorrhiza; Chris Ecroyd will take charge of progressing that project.
15. The meeting closed with acclaim at 8.20 pm.

Following the AGM the Group became an incorporated society, and its current documents can be viewed at www.societies.med.govt.nz by conducting a CURRENT NAME SEARCH.

Plant bust reveals orchid obsession

Novel New Zealand arrests put Czechs at heart of smuggling case

by Kevin Livingston and reprinted from *The Prague Post*,
the Czech Republic's English-language weekly newspaper, 5 February 2004

Victorian-era Europeans' obsession with rare orchids—which led some aficionados to hunt, steal and even kill in their quest for unique specimens—came to be called *orchidelirium*.

Cestmir Cihalik, an Olomouc cardiologist arrested last month in New Zealand for allegedly attempting to smuggle orchids, says his situation has nothing to do with orchidelirium.

He calls it a misunderstanding.

Cihalik, 54, and Jindrich Smitak, 60, were arrested Jan. 18 by New Zealand wildlife enforcement authorities who videotaped the men picking the plants from a national park. In the first case of its kind in that country, Cihalik was found in possession of 110 orchids and Smitak 15. Both men are accused of attempting to smuggle the orchids out of the country and face a maximum penalty of three years in jail and a 50,000 New Zealand dollar (900,000 Kc/\$33,500) fine. Smitak also faces three separate counts of removing plants from other locations, offenses that could each carry a penalty of three months in jail and a 2,500 New Zealand dollar fine.

The two orchid enthusiasts posted bail and will enter pleas in court Thursday, Feb. 5. Whether the men will be found guilty remains to be seen. Their case, however, has already sparked renewed global interest in the illegal trade of exotic orchids, a subject that has mesmerized orchid addicts for centuries and that was made famous in Susan Orlean's 1998 best seller *The Orchid Thief*.

The case has also put the Czech Republic center stage in what experts describe as a multimillion-dollar black market that has been growing in recent years. The case has also served to further the reputation of Czechs as

smugglers, according to local officials and horticulturists.

"It's not surprising that Czechs were arrested for smuggling the plants because we are known around the world as rare-species smugglers," said Romana Rybkova, curator of the tropical collection at the Prague Botanical Garden. "A lot of people are involved in it," she added.

In recent years, some of that trade has made its way to the Czech Republic, where according to customs officials four people have been arrested since 2001 attempting to bring illegal flora through the airport. Customs officials have also nabbed several smugglers bringing exotic animals and reptiles into the country, with the most recent arrest occurring Jan. 21.

Many of the most sought-after plants in the world come from New Zealand, where authorities say there is a growing interest from thieves for its unique orchid species, some of which can fetch as much as \$25,000 per plant. Officials there are calling for increased awareness in regards to strangers asking about orchids.

Called misunderstanding

Since their arrests, both Cihalik and Smitak have insisted they are innocent, and friends back home have rallied to the defense of the men.

Supporters say Cihalik, the dean of the medical school at Palacky University in Olomouc, and Smitak, the chairman of the Brno-based Society of Tropical Orchid Growers, are recognized plant authorities and would not participate in the illegal flower trade.

The Orchid Club Brno issued a statement calling the allegations against the men absurd. "We are expressing our conviction that the detention of Smitak and Cihalik and the accusation of smuggling plants is a misunderstanding," the statement read.

Colleen Newton, the New Zealand attorney representing the two men, did not respond to questions via e-mail, but in an interview with *Lidove noviny*, Cihalik did not deny being in possession of the plants in question. He also said New Zealand authorities had been tipped off to his arrival and had been watching him and Smitak. Cihalik said he had 15 species of orchids at the time of his arrest for which he admitted he should have had export permits but did not.

"We tried to contact the New Zealand authorities to inquire about nature protection but we did not," Cihalik said.

Smitak added the two did not know for certain which plants were protected.

Cihalik's wife said she did not want to comment on her husband's situation before the court hearing.

"The final decision will be made on Thursday when court is in session," said Jarmila Cihalikova. "Before that I will not comment on anything."

Picking orchids illegal

Both men said they did not believe they were picking endangered plants, but national laws and international treaties make the picking of almost any orchid illegal.

The most encompassing law comes from the 1973 Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) Treaty, which was signed by more than 120 countries. The treaty stipulates that any species of plant or animal that is endangered cannot be commercially traded. There are roughly 30,000 species of orchids worldwide and another 60,000 or so hybrids. There are around 50 kinds of orchids in the Czech Republic alone.

"It is an offense to remove or even pick an orchid," said George Barnes of The North of

England Orchid Society, the oldest orchid club in the world.

TAKE ONLY PICTURES

- **It is an offense** to remove or even pick most orchids
- **Those caught** with illegal orchids here can face a fine of up to 100,000 Kc (\$3,800) or three years in prison

Source: Czech Customs Authority

"Some orchids are rarer than others, and large fines and even jail sentences can be incurred for a breach of the act," he said. "Nonetheless, there are those who will try, and rare orchids can be worth many thousands of pounds."

Rybkova, from the Prague Botanical Garden, said she has witnessed firsthand the attempts made to smuggle rare plants into the country. "The Prague Botanical Garden worked as a rescue station for plants discovered by the police at the airport, so we know how big [smuggling] is," she said.

Those caught with illegal orchids here can face a fine of 100,000 Kc for a first offense and up to three years in prison for anyone attempting to sell 50 or more pieces.

Still, no one knows for sure how many plants go undetected.

"Nobody knows how big the illegal orchid market is. I can only hope that it is smaller than the legal one," Rybkova said.

—it is interesting to read how these events have been interpreted in the Czech Republic. An email correspondent wrote to NZNOG, "Our newspapers are developing a campaign in which they are speaking about 'green hysteria in New Zealand', 'collection of a few common orchids' 'New Zealand catchpoles' etc. ... They are appealing for our diplomats to do something about these people and save them from the hands of New Zealand's 'catchpoles'. I am really highly irritated by all this ... in my mind these people are simple criminals, nothing else".

in this issue...

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A young male tree weta visiting *Earina autumnalis*,



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