Botanical Society of Otago Newsletter

Number 46
October 2005

BSO Meetings and Field Trips

Inaugural Professorial Lecture, **Bastow Wilson**, Department of Botany and past-president of the Botanical Society of Otago.
"What does a plant community look like when it isn't there ?"
Thursday **October 13**, 5:30 Castle 1 lecture theatre, University of Otago (just behind the University Union) Wine and nibbles afterwards

15 October Sat 9 am. **Trees on campus** A guided walk by University of Otago Grounds Officer, **Robert Scott**, to see the University of Otago Commemorative and Memorial trees. In 1980 the University established a Register as a permanent record of commemorative and memorial features within the campus grounds. The Register was updated in 2001 with an improved page layout, better photographs and more flexibility in adding or altering existing pages. Currently 41 items are listed throughout the campus commemorating staff, students and benefactors of the University. Meet at the Botany Dept car park at 9:00 am. Contact Robyn Bridges, phone: (03) 479 8244.

26 October, Wed 5.10 pm **Assoc. Prof. Kevin S. Gould** will present the 4th Annual BSO/Botany Dept. Geoff Baylis Lecture with a talk entitled **Ghosts of Indian Princes - The Remarkable Properties of Red Pigmented Plants**. The eastern states of North America play host each year to one of nature's most spectacular phenomena. From Maine to North Carolina a rich mural of reds, carmines, crimsons, scarlets, and purples accompanies the leaves of deciduous trees as they embark on the processes leading to winter dormancy. New Zealand, too, has its share of vermillion spread across all orders of plants from the liverworts to the angiosperms. Such displays have long been considered an "extravagancy without a vital function". In contrast, recent research suggests that the red pigments –

anthocyanins – can in some instances be critical for plant survival. Anthocyanins seem to empower plants to tolerate a diverse assortment of environmental stressors, including exposures to strong light, ultraviolet radiation, drought, cold, fungal infections, and even protection from herbivores. The pigments are, moreover, potent scavengers of free radicals, the reactive atoms and molecules that have the potential to destroy DNA, membranes, and proteins. Red-pigmented plants also hold the potential for the advancement of human health; the consumption of anthocyanin-rich foods is associated with a lower risk of non-infectious diseases, including coronary heart disease, osteoporosis, ischemic stroke, Alzheimers, and certain cancers. These remarkably versatile pigments are evidently nature's Swiss army knife.

Plus: **BSO Audrey Eagle Botanical Drawing Competition** – Display and Prize Giving. NOTE SPECIAL VENUE: Castle 1 lecture theatre, Otago University. Finish time: 7:00 PM. All welcome to come to dinner out afterwards. Venue to be decided. Contact Robyn Bridges, phone: (03) 479 8244.

5 - 6 November, Saturday 8:30 AM **Weekend trip to Catlins area**. Building on last year's popular formula, this trip will explore several exciting botanical locations over two days. Saturday will be spent at Purakaunui Bay and its sandy beach flanked by enormous sandstone cliffs, followed by a look at the rare alluvial forest of Purakauiti Stream with its giant specimens of *Pittosporum obcordatum*, *Melicytus flexuosus* and *Olearia lineata*. Sunday will be based around Nugget Point with an opportunity to check out forest restoration and *Olearia hectorii* recovery at Otanomomo Scientific Reserve on the way home. Accommodation on Saturday night will be at Nugget Point Lighthouse Keepers house (numbers limited). Day-trippers are welcome to join us on either day. To reserve accommodation or find out more contact **John Barkla** ph. 476 3686 (evenings) by Wednesday 2 November. Leave from Botany car park at 8.30 am Saturday.

16 November, Wed 5.20 pm, **Jamie Wood - "An overview of the animal life of pre-human Central Otago, and how it interacted with the vegetation"** Jamie will portray some initial results of his PhD research, looking at a reconstruction of the prehuman fauna and flora and their interactions, using vertebrate, plant (leaves, wood, seeds, pollen) and invertebrate (focusing on beetles) sub-fossils found in lowland areas of Central Otago.

7 December Wed 5.20 pm. **Adrienne Markey,** Australia - **"A journey southwards to the subantarctic islands; finding a piece of New Zealand scenery in the middle of the Southern Ocean"**. The flora of the sub-antarctic islands, and its affinities to the flora of New Zealand has always held the interest of botanists, starting from Joseph Dalton Hooker on the Antarctic voyages of the H.M. Discovery Ships Erebus and Terror (1839 – 1843), to recent research using molecular markers to track the dispersal and evolution of plants in these regions. So, with great boldness and audacity, I found myself able to also make a direct comparison of these regions. Yes, the origins and evolution of the Sub-Antarctic plants fascinate

me, and it offered a chance to collect both *Coprosma perpusilla* ssp. *subantarctica* and *Nertera depressa* from their southernmost distributions and to complement current studies that I and fellow researchers had in progress. This talk will cover a week-long trip with Heritage Expeditions that Alex Fergus and I took part in earlier this year, and will show some of the glamorous megaphyllous herbs as well as a token seabird or two". Followed by **BSO End of year Dinner, 7 pm.** Everyone is welcome to celebrate another great botanical year at an end-of-year dinner at the Nanking Palace Restaurant, 198-204 King Edward St, South Dunedin, Ph 455 4218. It will be a banquet-style dinner, which will cost $21.50 per head (drinks extra). This restaurant is fully licensed and BYO wine. To RSVP either contact Lyn Bentley (details below), send a note to the BSO, PO Box 6214 Dunedin North, or drop a note into the BSO pigeon hole in the Department of Botany. Please RSVP by Tuesday 29 November. Contact Lyn Bentley, phone: 03 467 9616.

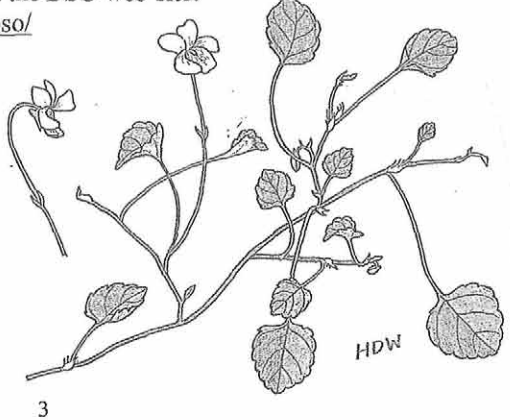
Meeting details: Talks are usually on Wednesday evening, starting at 5.20 pm with drinks and nibbles (gold coin donation), unless otherwise advertised. Venue is the NEW Zoology Benham Building, 346 Great King Street, behind the Zoology car park by the Captain Cook Hotel. Use the main entrance of the Benham Building to get in and go to the Benham Seminar Room, Rm. 215, 2nd floor. Please be prompt as we have to hold the door open. *Items of botanical interest for our buy, sell and share table are always appreciated. When enough people are feeling sociable we go out to dinner afterwards - everyone is welcome to join in.*

NEW Field trip details: Field trips leave from Botany car park 464 Great King Street, unless otherwise advertised. Meet there to car pool (10c/km/passenger, to be paid to the driver, please). 50% student discount now available on trips over 100 km. (see Treasurer's report). **Please contact the trip leader before Friday for trips with special transport, and by Wednesday for weekend trips.** A hand lens and field guides always add to the interest. It is the responsibility of each person to stay in contact with the group and to bring sufficient food, drink, outdoor gear and personal medication to cope with changeable weather conditions. See trip guidelines on the BSO web site: http://www.botany.otago.ac.nz/bso/

Cover Picture

Front cover. *Viola cunninghamii*, uncommon on Otago Peninsula, but present at Sandymount. Drawn by Hugh Wilson, *Stewart Island Plants*, 1982

Fig. right. *Viola filicaulis*



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President's notes

David Orlovich

Hello BSO members. We're getting to the end of another year and are already planning a new program for next year. It has been really great that so many people have been coming to trips and talks this year, in particular many new members. We've got a lot of exciting things coming up soon, including an Inaugural Professorial Lecture by Bastow Wilson on Thursday 13 October, a tour of the many significant trees on campus at the University on Saturday 15 October, and the 4th Geoff Baylis Lecture by Kevin Gould on 26 October. See this Newsletter or the web page for more information. We welcome a new committee member, Mike Thorsen. Mike volunteered to organise trips and talks for the society, and his help is very much appreciated. *He's started off on a high note by arranging for Jamie Wood to speak to us in November on the pre-human flora and fauna of central Otago.* Another committee member is leaving too - Norman Mason is soon to be moving to France for a postdoc, and we wish him all the very best. Norm has been very active in our response to the motorway realignment and has been a valuable contributor to discussions at all committee meetings, a regular attendee at talks and trips, and a great friend to many in the BSO, so we'll all be looking forward to his return! *We'll also be looking forward to his articles from France, as Norm has been a splendid reporter of trips and talks.* As well as a variety of other events in November and December (see this newsletter), we're having an end of year dinner at Nanking Palace in South Dunedin, following Adrienne Markey's *subantarctic* talk. I hope you'll be able to come along and celebrate the end of a great year for the BSO

Treasurer's Notes

Lyn Bentley

Good News and a Reminder

Cadbury Confectionery Ltd has again donated boxes of chocolates to our Society, which we use as a 'thankyou' gift to speakers at our Meetings. We acknowledge and appreciate their generosity.

The response to the Annual Subscription account sent out earlier this year has been very pleasing. Thank you to those who responded. The latest printout of the Member's list shows there are 16 outstanding Memberships from the 2004 year, 20 from the 2003 year. If your Newsletter has either of these year dates on the address label, you may like to become a financial member once again. Or, if you wish to 'unsubscribe me', please contact me at: stevelf@ihug.co.nz

50% travel subsidies for student members are still available. Just remember to pick up a Student Members Travel Subsidy Claim Form from a box on the table, under the stairs in the Botany Department before the next trip – a half-price trip to The Nuggets is a great way to end the year, and the drivers don't miss out, either. See newsletter 45 for full details.

Editor's notes

Allison Knight

Here's Newsletter 46, full of contrast. The performance of Audrey Eagle's runner beans continues to impress, while advance notice of her comprehensive 'Eagle's complete trees and shrubs of New Zealand' is good news indeed. Our cover picture is by Hugh Wilson, another impressive botanical artist, who is selling prints of his drawings to raise funds for continuing revegetation at Hinewai, Banks Peninsula. Audrey suggests that we pool our orders to save money on postage. Hugh's picture illustrates Moira's drive to propagate some of the less common species on the Otago Peninsula while they are still about. Toni Atkinson adds a touch of whimsy with her musings on the mystic Crater, while the original art work features Sue Ballantyne. We're a bit thin on trip and meeting reports, book and website reviews - would be encouraging to see more by next issue. Congratulations to Ewen Cameron, Auckland, for scooping the pool in botanical awards. Do let our committee know if there is anyone down south you'd like us to support for the Loder Cup or the Allan Mere Award.

Editor's guidelines Contributions are always welcome, but newsletter space is a little limited. Please note these few gentle guidelines. Please try and aim for a 0.5 - 1 page of 14 pt Times New Roman for trip and meeting reports and book reviews, and 1 - 2 pages, including illustrations, for botanical notes. Original articles, if they are exceptionally relevant, could stretch to 4 or 5 pages of 14 pt, including illustrations.

Please submit copy for next newsletter by 10 January 2006

Disclaimer *The views published in this newsletter reflect the views of the individual authors, and are not necessarily the views of the Botanical Society of Otago. Nor do they necessarily reflect the views of the Department of Botany, University of Otago, which is supportive of, but separate from, our society.*

Notes, Muse and Article

A bean in the hand is worth 4 in the bush

Kelvin Lloyd

Audrey Eagle's and Graeme Jane's comments on their runner beans prompt me to add my own. Yes, flowering was late as I recall, but I had a good crop at the end of it - about 2.5 kg of beans from a row about 1.5 m long (10 plants). These beans are the progeny of Audrey's own, having grown from the seeds she kindly distributed at a BSO meeting a couple of years ago. I planted them where my garden abuts a north-facing *Olearia paniculata* hedge, which they grow up through very happily. Picking them is fun because you always get more than you expect: for every ripe bean seen from afar, there are at least four more hidden in the hedge. I've still got plenty in the freezer. Many thanks Audrey!

Kelvin Lloyd
Pine Hill

Muse letter ... *for those who visited the Crater.*

Thrust high in the barren hills we found a volcanic crater, its rim of giant basalt blocks tumbled into four distinct peaks.

But did you see in the wide grass and tussock bowl, the circle of standing stones? The robed people moving amongst *sarsen* and *trilithon*, or sitting within the inner *bluestones*?

Did you see their meetings at the trysting place beneath the lone kowhai among the rocks on the southern rim? Smell the cooking fires? Feel the sun winking beneath a huge lintel as it sinks on the long snowy horizon. Hear the slow chants rise in the dusk?

Toni Atkinson

(who was touched by a yellow-smooth glacier-hardened Sarsen stone at the Crater – *ed.)*

Collecting permit for Sandymount Reserve

Moira Parker

The Otago Botanical Society now has a Department of Conservation collecting permit for the Sandymount Recreation Reserve, Otago Peninsula, valid for 5 years, which allows for collection of seed and cutting material by members of the Society.

The application for a permit follows from the 2004 publication of a report by Dr Peter Johnson "Otago Peninsula Plants: An annotated list of vascular plants growing in wild places". Peter identifies 75 native plants that occur in only one or two sites. 24 of these species with a very restricted distribution are known from Sandymount and Sandfly Bay (Table 7 page 14) This report alerts us to a situation where a number of species may be disappearing from the Otago Peninsula flora.

Uncommon woody plants present at Sandymount include *Olearia fragrantissima, Carmichaelia petriei, Coriaria sarmentosa, Coprosma acerosa* and *Raukaua anomalus.*

Peter Johnson has provided a list of 11 herbaceous plants that are relatively uncommon on Otago Peninsula, and which occur in the Sandymount and Sandfly Bay area. His list includes *Raoulia tenuicaulis, Myosotis pygmaea* var. *pygmaea, Cardamine corymbosa, Ranunculus acaulis* and *Viola cunninghamii.*

In addition Peter has provided information on 7 herbaceous plants known from only this area of Otago Peninsula. Searching for these plants to confirm their continuing presence would be a valuable exercise.

I hope that interested Botanical Society members may be able to find and identify some of these relatively uncommon species. Then we can propagate them so that eventually these plants can be established in other locations on the Otago Peninsula. Some members have volunteered their propagation skills and the Yellow-eyed Penguin Trust has offered facilities at their community plant nursery in Company Bay.

I would like to organise a field trip to the Sandymount Reserve in early 2006. If you have never been there, it is a stunning place. However, if anyone is interested in botanising the reserve for a half day during November/December, please contact me on 4780-214 or email moiraparker@clear.net.nz . It would be good to identify some of theses uncommon plants in flower before we mount a seed-collecting expedition.

Durvillaea kelp: harvesting and biology

Cameron Hay

In the north of New Zealand, eg at places like Piha and Bethells, the only species of *Durvillaea*, is *D. antarctica*. Knowledge of a distinctive southern *Durvillaea* species was slow to reach the north, and because of the huge size of the plants, nobody was able to press an entire mature plant onto a herbarium sheet.

In the south, however, Mrs Eileen Willa, life-time resident of Stewart Island, was busily collecting and pressing seaweeds onto herbarium cards which were kept at Rakiura Museum in Oban. Her favourite collecting place was Ringaringa beach where large quantities of drift seaweed washed ashore after easterly storms. Over the years Mrs Willa communicated with several of the world's most famous marine botanists including Prof F Papenfuss at the University of California and many of her specimens are now scattered throughout plant herbarium collections worldwide. Mrs Willa always knew that there were two types of *Durvillaea* in the south. In letters and with drawings and specimens she communicated this information to Victor Lindauer (son of the famous portrait painter of Maori, Gottfried or Bohumir Lindauer) at the University of Auckland who described the new species in 1949, naming it after Mrs Willa.

This discovery of such a large, undescribed kelp seaweed in 1949 may seem inconsequential. For many folk, seaweeds are pretty much all the same — an infernal nuisance when they get around the propeller! But for marine botanists, the late discovery of such a distinctive and ecologically dominant kelp, widely distributed on mainland southern New Zealand, was as if terrestrial botanists had suddenly stumbled on an undescribed dominant tree like rimu of kahikatea.

While *D. willana* is an important habitat for commercially lucrative species such as paua, kina, morari (greenbone or butterfish) and moki, the plant itself is currently of no immediate commercial importance in New Zealand. It has, however, been harvested on a small scale in relatively recent times.

Alginates

Up to one half of the dry weight of *D. willana* is a substance called alginic acid. It cements the cell walls together much like cellulose in land plants. Alginic acid (which is insoluble) can be chemically converted to other alginate salts, eg by soaking chopped kelp in washing soda to produce soluble sodium alginate, which is the main ingredient of non-dairy ice creams in America. These sticky, viscous alginates have a thousand-and-one uses in food preparation as a stabilising and suspension agent. Alginates are also added to car polishes, certain paints; they are used as moulds for metal castings and they stick the flux to the outside of electric welding rods. They are also used medicinally partly because of their ability to absorb radioactive substances.

In 1971 a major Japanese Chemical company exported a trial shipment of 10 tonnes of *D.antarctica* from the northern Kaikoura coast to Japan for alginate extraction. Their scientists, who travelled the length of the South Island east coast taking samples and asking local fishermen to harvest the kelp, received a mixed reception. On the Kaikoura

coast the (then) New Zealand Railways predicted that harvesting bull kelp would remove an important buffer to wave action on a coast where sections of the main trunk line were constantly undermined by wave action. Local Kaikoura fishermen were also concerned about possible detrimental effects such harvesting would have on various fish and shellfish species such as moki, morari and paua.

Raising little enthusiasm for their venture on the Kaikoura coast, the Japanese business men and scientists came south to Otago where eventually they engaged a local business man from Palmerston to harvest *Durvillaea* in the Shag Point area. The Ministry of Agriculture and Fisheries issued an experimental license for him to harvest two stretches of coast of 16 and 19 km. Commercial harvesting by snorkellers began in 1971. Severed *Durvillaea* plants, at first mainly the buoyant *D. antarctica*, in bundles of about 150 kg, were winched ashore where attempts were made to dry and mill the plants at a factory at Shag Point into a coarse "meal" for export.

The business operated erratically for about 3-4 years, and finally closed in 1976. There were, with persistently bad weather for harvesting and especially for drying the kelp, poor price, high labour costs for harvesting and processing difficulties. The harvesters also found that they quickly exploited the *Durvillaea* on the most accessible parts of the shore. The total export was probably 75-100 tonnes (dry), which amounted to about 450-600 tonnes of wet kelp.

At King Island in western Bass Strait, Tasmania, *Durvillaea potatorum* has been collected as a source of alginate since the early 1970s. Only storm cast plants are harvested and over a ten-year period from 1976-86 approximately 25,000 tonnes of dried, milled kelp was exported from King Island to the UK for alginate manufacture.

In New Zealand in the 1970s we knew little about the biology or ecology of either *Durvillaea* species. By dint of a research grant from MAF, funds from the Golden Kiwi Lottery and from the McKenzie Trust, the Zoology Department of the University of Canterbury began a study. Much of the fieldwork was done on the Kaikoura coast and at Tautuku Peninsula in the Catlins.

Biology

Both species have separate male and female plants in approximately equal proportions. In winter the females release millions of very small eggs (about 1/30 mm in diameter) from pin-prick sized cavities in the blade (conceptacles). When ripe female plants are allowed to dry slightly, the exuded eggs rub off as a greenish-brown deposit. The eggs probably sink quite quickly, and once fertilized by sperm from the neighbouring male plants, quickly adhere to the rock. Within a few weeks a small leafy plant with a simple blade, stipe and holdfast appears. These grow quite quickly attaining lengths of about 0.5-1 metre in a year. However, fully grown plants are commonly at least 4-5 years old. There is little significant regeneration from cut stalks: typically the severed stalk and the holdfast rot away.

Areas harvested in spring and summer, when the seas are often calmest, are not quickly recolonised by *Durvillaea* because the female plants are not releasing eggs. Instead the

summer-cleared areas are often carpeted with other seaweeds especially coralline turf, which covers much of the space where the kelps had previously been attached. Such areas are only slowly recolonised by the kelp. Areas harvested in winter, however, when there are plenty of eggs about, are rapidly recolonised, especially if harvesters take the time and trouble to chip away the holdfasts. Unfortunately seas were roughest in winter and the holdfast-chipping process can be tedious. Which means that if most harvesting is in summer then the ecological nature of the coast might be changed from a *Durvillaea* dominant coast to one dominated by a low algal turf.

Although only a small quantity of dried bull kelp was exported from Otago, there is still a worldwide trade in dried milled seaweed for alginate. Much comes from beds of *Macrocystis* kelp in North America, Chile, and the Falkland Islands and from beds of *Laminaria* and *Ascophyllum* in Europe. A small amount comes from beach-cast *Durvillaea potatorum* on King Island in Bass Strait.

As these natural resources diminish, or because of resistance to harvesting for other reasons, and if the algin price rises, there is always a possibility that other international chemical companies will propose harvesting *Durvillaea* from New Zealand's southern shores. The ecological effects of this could be considerable, especially if an alginate extraction factory was established in New Zealand. Such factories require a continuous supply of raw material to be commercially productive.

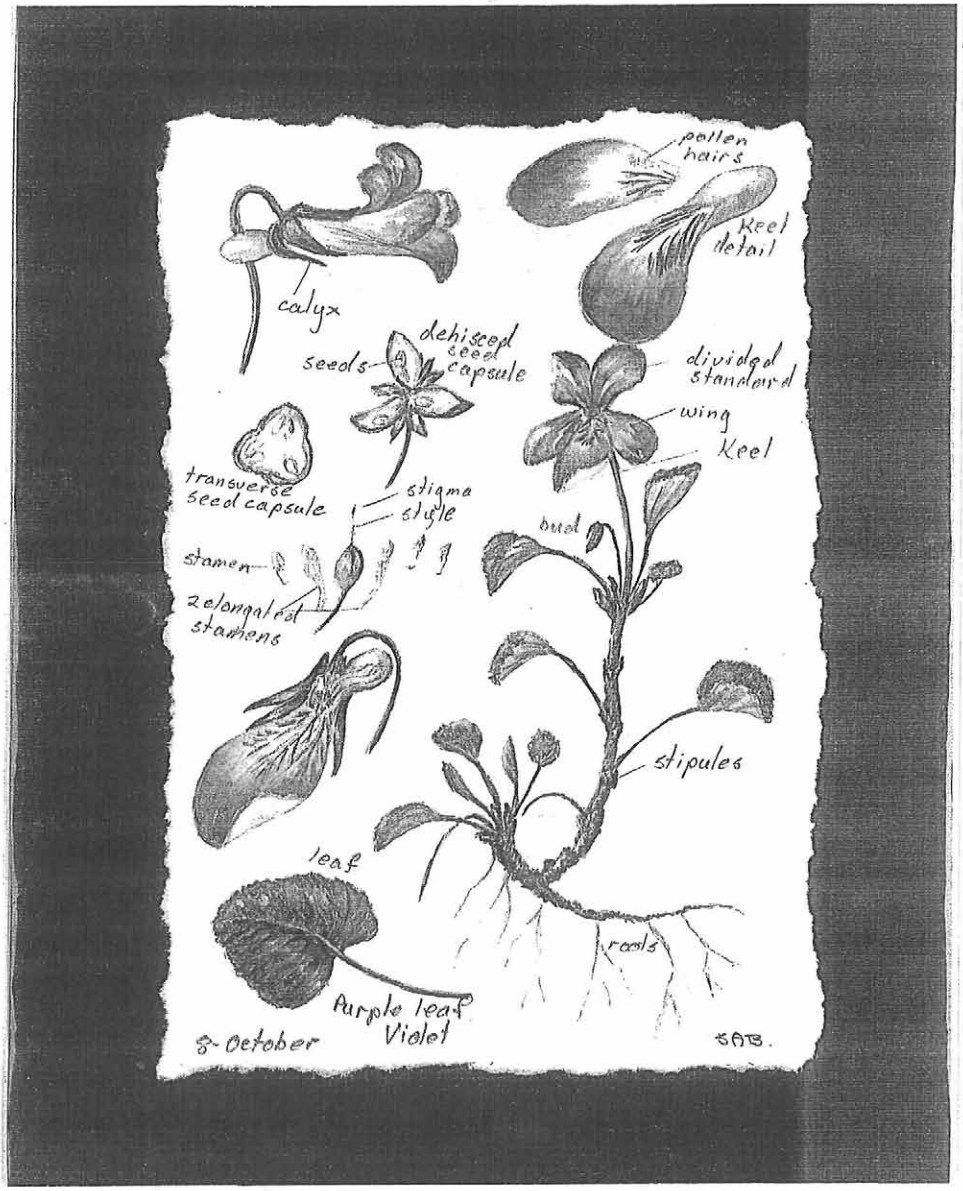
The effects of harvesting *Durvillaea* on the myriad of animals and plants that live within the kelp forest still are not known. Many of these species such as the brown seaweed *Marginariella boryana*, various large chitons and limpets, sea squirts, species of paua and so on are also New Zealand endemics. The effect of large-scale harvesting of *D. willana* on our already depleted paua resource, and on declining stocks of kelp-dwelling fish such as trumpeter, moki and morari are not known. Without the kelp cover they would presumably be much more vulnerable to predators such as seals which have increased in number in recent years.

What is certain is that large-scale harvesting would dramatically increase wave action in the intertidal and shallow subtidal zone. This would probably be detrimental to many of these kelp-dwelling species. Large scale harvesting of *D.antarctica* also destroys the communities of chitons, top shells, worms and crustaceans that live within the burrowed holdfasts. Also certain is that large-scale harvesting of the kelp would aesthetically change the entire appearance of our southern shores.

Currently there are 17 marine reserves on the mainland New Zealand coast. Several are in estuaries and just seven are south of Cook Strait. Collectively they amount to far less than 1% of the length of the mainland coast and none in South Island includes any significant area of exposed *Durvillaea* coasts. It is therefore important that we protect a very good example of the type of shoreline on which endemic *D.willana* is the ecologically dominant species. On land we have reserves for red tussock, for rimus and even ranunculuses. Several sites along the Otago and Southland coasts and on Stewart Island would be ideal candidates for protecting this endemic and dominant kelp and the flora and fauna that live within forests of Mrs Willa's *Durvillaea* kelp.

Botanical Art Feature – watercolour on pencil.

Purple-leaf violet *Sue Ballantyne*, 2004 Art competition.



For other entries in the inaugural Audrey Eagle Botanical Drawing competition 2004, see previous newsletters and: http://www.botany.otago.ac.nz/bso

Meeting & Trip Reports

20 July, Geoff Rogers: *Otago in the time of the moa.* Talk report *Anon*

Landscape history is a science low on data and high on speculation, with some vivid and confident pictures and propositions erected from the slimmest of data packages. Trawling carefully through the most controversial topics such as the extent of 'natural' or pre-human tussock grassland, Geoff avoided dogmatic and detailed pronouncements on landscape settings with liberal use of "maybe" and "possibly". He availed himself of a wide suite of research tools and data to erect generalised ecological theories on why woody plants would have dominated most Otago vegetation, the patchy and infrequent pattern of natural fire, co-evolutionary relationships between extinct birds and plant traits, and the adaptive selection of a specialist guild of dryland moa.

He concentrated on the 10 000 years before humans arrived 750 years ago. He described how samples of radiocarbon-dated charcoal, pollen diagrams with and without a charcoal record, and relict patches of living trees and shrubs can be used to reconstruct the pattern of vegetation and fires. It was likely that various facets of dryland forest were widespread on the hill-country and range slopes, being composed of mixes of drought-tolerant beeches, celery pine, Hall's totara, ribbonwood, lacebark, fierce lancewood, kowhai, marbleleaf, and kohuhu. Scrub of many small-leaved species was extensive on basin floors, gorges, and other rocky outcrops. The light-canopied forest and scrub had rich grass and herb understoreys. Straight grassland was quite restricted, even above the treeline, where shrubs competed successfully with the snow-tussocks to produce extensive tussock-shrubland.

All the evidence is that pre-human fire was highly infrequent and patchy and there are only rare instances where those fires generated a sustained rise in tussock grasses in secondary vegetation, benefiting from their fire-adapted traits. Although all of Otago is fire-prone, at least in summer, places with woody vegetation rich in phenolic compounds such as inaka, mountain celery pine, Hall's totara, and bog pine were the primary sources for the breakout of fire. Paradoxically perhaps, wetlands appear to be particularly fire-prone, especially upland peat bogs, because of their phenolic-rich vegetation.

The palaeontologists have been busy, too. They are not only examining fossil bone deposits but collecting plant seeds, leaves, and twigs to get a clearer picture of the habitat relationships of extinct birds of eastern South Island. Their latest discoveries tell us that a scrub-adapted guild of moa of broad-breasted and squat proportions of 150 kg weight and only 1 m tall at the shoulder were specialised to dryland scrub. One species was a specialised wood (twig) eater, with secateur-like capability of clipping branchlets up to 15 mm diameter. Another was a grazer on softer herbaceous ground-hugging plants. Their primary predator, *Harpagornis* or Haast's eagle, was specialised to hunt larger birds above about 3 kg body weight within glades and other openings of eastern South Island dryland scrub and low forest.

There wasn't too much back-peddling in the question session, despite searching questions. Alternatively, it threw-up interesting discussion on how fire- and mammalian-browse-adapted traits in plants from Australia might have been inherited by the New Zealand flora from long-distance dispersal. Matagouri, the only native plant with true spines is one such candidate as a comparatively recent immigrant. Lignotubers – the underground swollen basal part of stems used as storage organs as a survival mechanism in times of disturbance (fire) or climatic extremes - are rare in the New Zealand flora but a frequent plant trait on dry, fire-prone continental landmasses.

23 July, Tunnel Beach field trip. *Allison Knight*

A very low tide after a full moon is a perfect time to explore Tunnel Beach, and Graeme Loh made the perfect guide to all the extra sights. As well as the fairy prions (apologies for calling them fairy terns in the last newsletter) there were white-fronted terns and rock pigeons nesting on the cliffs. Embedded part way down the sandstone cliff was a partly exposed fossil whale, while on the wind-eroded top were exposed fossils of shells including cardiocrinum, scallop and the gizzard stones of ancient seabirds.

A closer look at the coastal turf revealed a mat of *Leptinella dioica*, the first flower of spring on *Samolus repens*, the sea primrose, and the last fruit of autumn on *Selliera radicans*. *Atriplex buchananii* was also in flower while the *Salicornia australis* and the *Disphyma australe* (native ice plant) on the exposed slopes were looking a bit weather-beaten. Down near the shelter of the tunnel mouth we spotted *Hebe elliptica*, *Senecio lautus* with purples stems and veins, and the stout form of the native celery, *Apium prostratum*. For the daring, right on the edge of the cliff grew sea blight, *Suaeda novae-zelandiae*.

Rocks and fence posts were host to a variety of lichen communities. Graeme introduced us to the best botanical aid to kneeling he'd come across – Eazi-fit neoprene knee protectors, from Placemakers. I've got some now - they're brilliant for lichening and I can garden all day without getting a sore back or damp knees!

Thanks to John Barkla for preparing the handout. Braving the winter weather were: Graeme Loh, Toni Atkinson, Janet Ledingham, Judy Russell, Francie Beggs and Allison Knight.

21 Sept. Leaving the white line: Conserving tropical forests in the Adelbert Range, Papua New Guinea. A talk by Matt Scott. *Norman Mason*

The audience was treated to a typically vivacious talk by Matt Scott on tropical forest conservation in a remote part of Papua New Guinea. Matt began by explaining that the flora and fauna of Papua New Guinea was a mix of Gondwanan and Asian origins, with podocarp-like and acorn-producing species occurring in close proximity to one another. We were reminded that the human diversity of New Guinea is as fascinating as the rest

of the island's biological diversity, with 800 languages being spoken throughout the island.

One of the major conservation challenges facing Papua New Guinea is deforestation associated with timber extraction. Matt explained that half of the forested area has been identified as economically viable for logging. Almost all of the land is owned collectively by clans. But (and it's a big one) the government is able to sell logging rights to logging companies. 60 percent of the logging is conducted by a single Malaysian company, and members of parliament or their relatives have interests in almost all logging in PNG. Further, the people that own the land have no say in how the logging is conducted.

Being dissatisfied with this situation the people living in the Adelbert Range decided to take the government to court – and won! This gave them the right to log their own land (at least in the western part of the range). The Nature Conservancy – a non-governmental conservation trust that originated in the US – has been helping the local people to manage their land and identify areas for different uses, such as settlement, logging, farming, hunting and conservation.

Matt, along with Rob Cadmus (a former student at the UO Department of Zoology), set out to survey areas set aside for conservation in order to devise a management plan and to estimate species composition in other areas through conversations with local people. Three local guides aided them in all their sampling. All the plant species along altitudinal transects were recorded using their local names. The use of the same three guides for all the sampling ensured that the names were consistent throughout the study. The soils of the range are mainly clays, overlaying limestone, so that Matt and Rob either found themselves on slippery soil or slippery rock during their sampling.

More detail was given on the people that Matt and Rob encountered than the plants. Matt explained that the villages tend to be sited on high ground to avoid malaria. The local people grow some cash crops such as vanilla and cocoa in order to pay for their children's to schooling, but most effort is devoted to growing food crops. These include taro, the giant swamp taro, sweet potato, corn, yams, sugarcane, cassava, bananas, a type of squash and coconut (in coastal areas).

We were provided with an example of how local superstitions can aid conservation, with Matt explaining how one of the guides suggested a certain area of forest be avoided due to the presence of little people. Such superstitions are waning in some areas of New Guinea, with detrimental effects on the larger game animals.

Overall it was a highly enjoyable and highly visual talk. I was left pondering the realities of working in such a challenging place (pondering especially the quality of the local food), while also reflecting on the future challenges these isolated people, and the ecosystems they depend on, will face from the outside world.

Look out for the following reports in the next issue. 7 August, Okia Reserve trip, 31 August, *Weeds & I;* Ian Radford's talk, 10 September, The Crater trip. Please send in some more website and book reviews by then, too!

Article summary

Ewen Cameron

New names in *Coprosma*

An Examination of the *Coprosma cliliata* and *C. parviflora* complex.
GT Jane, NZJ of Botany 43: 735 – 752, 2005.

Five species are recognised in the complex:

C. parviflora (now only recognised north of Auckland);
C. tayloriae AP Druce ex GT Jane sp. nov. (formalises the wisely used tag name *C.* "tayloriae");
C. dumosa (Cheeseman) GT Jane comb. nov. (formally elevates this variety to species level);
C. ciliata;
C. pseudociliata GT Jane nom. nov. (= *C. parviflora* var. *pilosa* Cheeseman).

It is fitting that Marie Taylor's (1930 -99) work on *Coprosma* is formally recognised by the name *C. tayloriae* - which will earn its own entry into any future revision of her "Meanings and origins of botanical names of New Zealand plants (2002)".

From the Auckland Botanical Society Newsletter, October 2005.

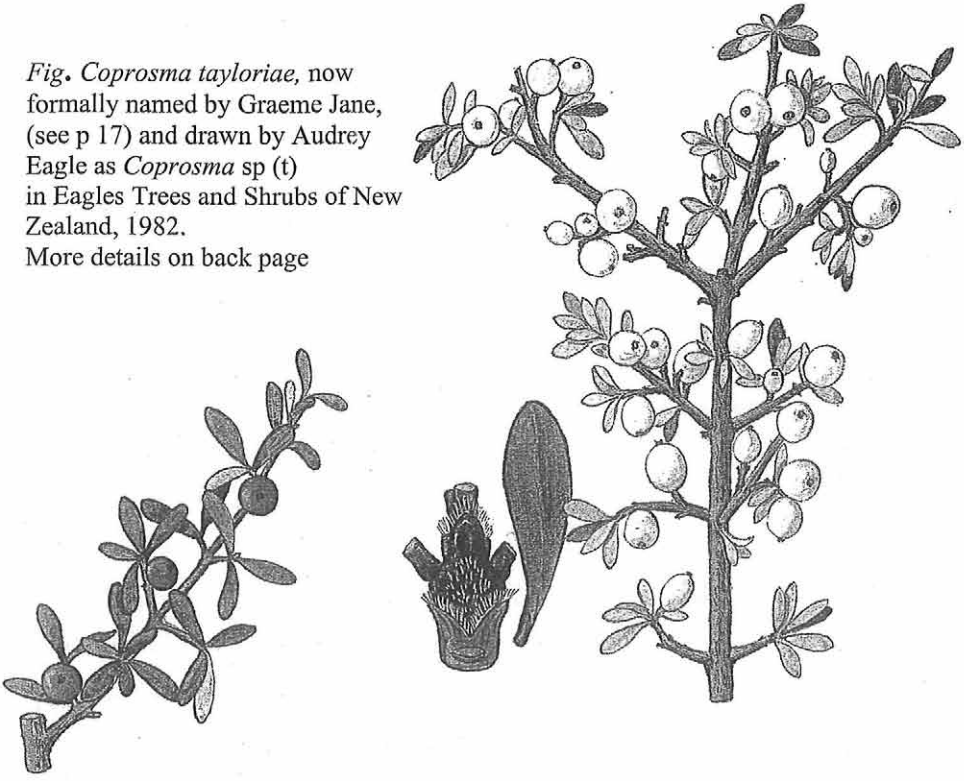


Fig. Coprosma tayloriae, now formally named by Graeme Jane, (see p 17) and drawn by Audrey Eagle as *Coprosma* sp (t) in Eagles Trees and Shrubs of New Zealand, 1982.
More details on back page

Advance notice

Touchwood Books

.....what many of you have been waiting for is **Eagle's Complete Trees and Shrubs of New Zealand** by botanical artist, **Audrey Eagle**. It is now due in May 2006. Full of fresh paintings, updated illustrations and several new species, the book will represent every known tree and shrub in New Zealand. With more than 800 paintings, including full sized images and detailed enlargements, plus comprehensive notes, it will provide up-to-date botanical information on more than 500 plants. It will be a 2 volume hardback set, $199.

Web newsletter, September 2005

News

Botanists roundabout

PB

The good news from our patron, Peter Bannister, is that he is now officially recognised as an emertius professor, and has moved to a freshly painted room in the front of Botany House, across the road from the main Botany Department. Peter has also recovered sufficiently from a sudden major operation to agree to apply his artistic talents by helping to judge the current BSO Audrey Eagle botanical drawing competition.

Loder Cup and Allan Mere Awards 2005

Double congratulations to Ewen Cameron for winning the Allan Mere Award 2005, for outstanding contributions to New Zealand botany (NZ Botanical Society Newsletter 81, Sept. 2005) AND the Loder Cup 2005 for outstanding contributions to botany and conservation. (Wellington Bot. Soc. Newsletter, Sept. 2005, DOC website).

Ewen has been a member of the Auckland Botanical Society since 1980, was president from 1993 – 2003 and is now an active vice-president. He also contributes to botany in his role as Curator of Botany at the Auckland Museum Herbarium (AK). In addition to many scientific papers Ewen has published at least 100 original popular articles on New Zealand and Pacific Botany, mainly in the Auckland Botanical Society Journal (and its predecessor, the Newsletter), but also in the Rotorua and New Zealand Botanical Society Newsletters.

He has been Acting-Editor for the New Zealand Botanical Society Newsletter on 3 occasions, and he has also helped with the 1991 joint Australian/New Zealand Biosystematics and New Zealand Botanical Society conference, and the 2003 John Child Bryophyte Workshop based at Hunua.

Ewen added over 13,000 specimens to the internationally recognised Auckland Museum herbarium and documented many plants from the northern offshore islands, including some for the first time.

Forest and Bird President, Professor Peter Maddison acknowledged Mr Cameron as "a leader in natural history and a tireless worker for conservation."

These are but a few of the accolades excerpted from the three references above.

Botanical Diary

National Events

21st John Child Bryophyte Workshop 8 – 13 December 2005

One of the aims of a John Child Bryophyte Workshop is to gain and share knowledge of, and encourage an interest in, the mosses, liverworts and hornworts of New Zealand. They are open to all who are interested in bryophytes, from novice amateurs to professional botanists.

The 21st workshop will be in the North Island and based in the **Pohangina Valley**, which is 38 km from Palmerston North. Initial indications are that the workshop will be limited to 40 participants. For more information email Lynette Fischer at lynettefischer@paradise.net.nz

Wellington Botanical Society Summer trip 28 Dec 05 – 6 Jan 06 Based at Camp Wakarara, Ongaonga. Trips to **Ruahine Range & Hawkes Bay**. Register with Sheelagh and Gordon Leary, ph 04 527 7380, email: GandSLeary@xtra.co.nz. $150 deposit.

Canterbury Botanical Society have two summer camps: **Stewart Island,** 4-11 Dec**, and Awakino ski Field,** 31 Dec 05 - 7 Jan 06. Secretary Margaret Geerkens,)3 352 7922, email: bert.marg@xtra.co.nz. See Newsletters file in Botany Dept tearoom for more details of these and other Botanical Society trips around the country.

Cheeseman Symposium, Nov 2006 – a symposium to celebrate the centenary of the first edition of Cheeseman's Manual of the New Zealand Flora, 1906. For further information contact Mei Nee Lee, mnlee@aucklandmuseum.com, with Cheeseman symposium as subject.

Local Events

Special Botany Department Seminars: October 2005

Note different venues!

13 October Thursday 5.30 p.m. Castle 1 Lecture Theatre.
Inaugural Professorial Lecture
What does a plant community look like when it isn't there?
Professor **Bastow Wilson**, Botany Department, University of Otago
Wine and nibbles afterwards

19 October, Wed. 12 noon Benham Seminar Room, Dept. of Zoology (new building)
The relative importance of mainstream water velocity and physiology (nutrient demand) on the growth rate of *Adamsiella chauvinii*.
Louise Kregting, Botany Department, University of Otago, Dunedin

19 October, Wednesday 6 pm. Quad 1 Lecture theatre.
The John Smaillie Tennant Lecture 2005
Coffee, tea and the goddess of eternal youth: some thoughts on the New Zealand Flora.
Dr **Michael Heads**, Lecturer, University of the South Pacific, Fiji

26 October, Wednesday 5.10 pm, Castle 1 Lecture theatre.
The 4th annual Geoff Baylis Lecture, with the **Botanical Society of Otago**
Ghosts of Indian princes: the remarkable properties of red-pigmented plants
Associate Professor **Kevin Gould**, Department of Botany, University of Otago

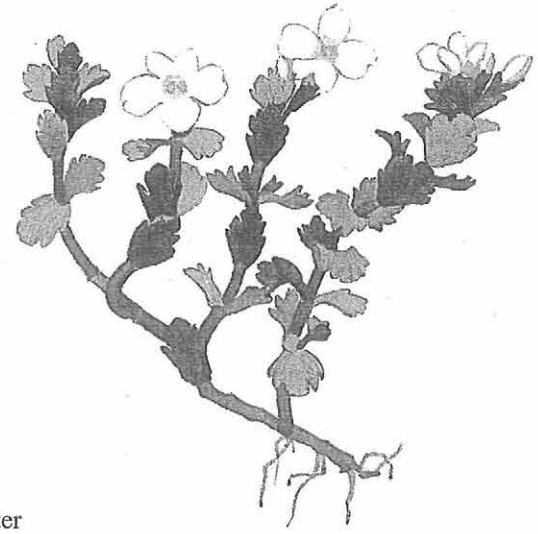


Fig. *Parahebe birleyi*,
by Nancy Adams,
in New Zealand Alpine Plants,
AF Mark & NM Adams, 1973.
Renamed ***Hebejeebie birleyi*** by
Michael Heads in BSO Newsletter
36, 2003

Conservation Volunteer Events/Opportunities for Oct/Nov

- **Contact** the named person for further details. For DOC activities contact David at DOC Coastal Otago Office. Phone 03 474 6926. Email dmules@doc.govt.nz.

Please come prepared for all **weathers**, with sturdy **footwear, lunch** and a **drink.**

Friday 14 October	Botanic Gardens Education Centre	Horttalk. *Landscaping with native plants* by Fiona Eadie, head gardener, Lanarch Castle. All welcome.	12 noon.
Mon 24 October	Old Cromwell Town	National Gold Panning Champs at Cromwell Fair. Prizes and trophies for all ages. **Contact** Roberta Laraman 03 445 1516.	Starts @ 10.00am, entries on the day.
Wed 26 October	Castle 1 Lecture Theatre, Otago University	Baylis Lecture by Assoc. Prof. Kevin Gould, plus display and prizegiving for Audrey Eagle Botanical Drawing Competition.	5.10pm. All welcome.
Sunday 30 October	Pyramids, Okia, Otago Peninsula	STOP workday cutting elders and releasing shrubs. Bring loppers, pruning saws, chain saws, gloves. **Contact** Moira Parker 03 478 0214 or Lala Frazer 03 478 0339.	Meet Dicks Road carpark @ 10.00am.
Sat-Sun 5-6 Nov.	Botanical Society weekend trip to Catlins	Explore exciting botanical locations at Purakaunui Bay, Purakauiti Stream, Nugget Point, Otanomomo Reserve. To book, **contact** John Barkla 03 476 3686	Meet Sat @ 8.30am at 464 Great King Street. Stay at lighthouse keeper's house. Day trippers welcome.
Sat 26 Nov.	Portobello Peninsula, Otago Peninsula	STOP workday releasing shrubs. Bring hedgeclippers, gloves. **Contact** Moira Parker 03 478 0214 or Lala Frazer 03 478 0339.	Meet on site @ 10.00am.

A HINEWAI FUNDRAISER

Botanical prints – Mount Cook National Park

500 sets of four of Hugh Wilson's Mount Cook drawings are available. All proceeds go to Hinewai's land purchase and fencing fund.

* Tussock and matagouri flats
* Scrub and shrubland
* Alpine grassland
* Rock above snowline

Prints are in full colour, 30 x 42 cm, on 170 gsm media silk paper, in light-fast inks (keep out of bright sunlight though) Species shown in each plate are identified on reverse.

NAME

ADDRESS

Number sets required at $40·00 a set ☐ $

plus post + packaging at $6·00 a tube $

(within N.Z. Up to 3 sets can be mailed in one tube)

Amount enclosed $

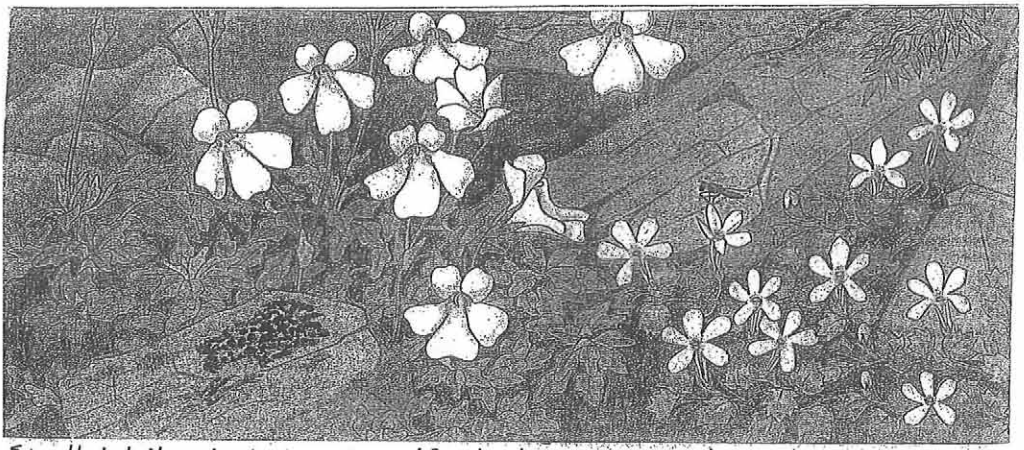
Make cheques out to Hugh Wilson please

Send order and cheque to : Hinewai Reserve
R.D.3 Akaroa 8161

Phone : (03) 304 8501

Prints may be viewed and purchased at Hinewai if preferred.

Overseas orders : contact Hugh by phone or post for arrangements and postage costs.



Small detail, actual size, from 'Rock above snowline', copied in half-tone from full colour print.

from Botanical Society of Otago

Botanical Society of Otago:

http://www.botany.otago.ac.nz/bso/

PO Box 6214, North Dunedin, NZ

Patron: *Professor Peter Bannister*

Committee 2005 –April 2006

Chairman, **David Orlovich**, *david.orlovich@botany.otago.ac.nz*

Secretary, **Robyn Bridges**, *robyn.bridges@stonebow.otago.ac.nz*, ph 479 8244

Treasurer, **Lyn Bentley**, *stevelf@ihug.co.nz*

Events Manager, **Moira Parker**, *moiraparker@clear.net.nz*

Program Manager, welcome **Mike Thorsen**, ***mthorsen@doc.govt.nz***

Committee; **Bastow Wilson**, *bastow@otago.ac.nz*, **Abe Gray**, *graab419@student.otago.ac.nz*, **John Barkla**, *jbarkla@DOC.govt.nz*, **Norm Mason**, *norman.mason@botany.otago.ac.nz*. There's still a spare space on our convivial committee – please contact a committee member if you'd like to be co-opted!

Newsletter editor, **Allison Knight**, *bso@botany.otago.ac.nz*, ph 487 8265

Please submit copy for next newsletter by 10 January 2006

This Newsletter was published on 7 October 2005. ISSN 0113-0854

Membership form:

Botanical Society of Otago, 2005

This form is also available on our website;
http://www.botany.otago.ac.nz/bso

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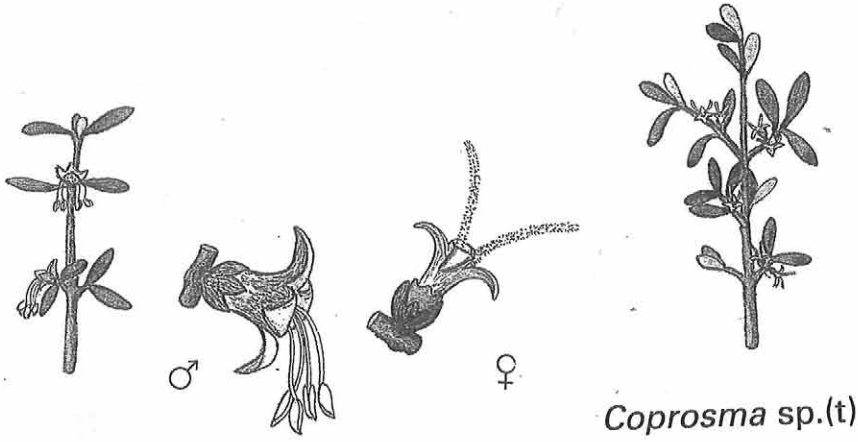

Coprosma sp.(t)