The following Field trips are proposals at this stage. Further details will be included in future Bulletins when the trips are confirmed.

August 6 & 7 -- Walpole Area to look for *Eriochilus scaber "subsp. orbifolia"*

October 15 & 16 -- Scott River to look at later flowering *Caladenia.*

October 22 & 23 -- Walpole Area to look for different/new *Pterostylis aff. turfosa* taxa.

'T'-SHIRTS AND WINDCHEATERS

The prices for this year's supply of garments printed with the group's logo were included in last month's Bulletin. Orders need to be placed promptly as we need a minimum of 20 garments before purchasing and printing can be organised.

The logo is 8.5 cm in diameter and is positioned at the left front unless you specify otherwise. You may also have the logo printed on your own garments, provided that the colour is suitable for white ink. Used garments will be printed at $4.00 per print but the group will not accept any responsibility for poor prints on used garments because the surface texture may have deteriorated due to washing, preventing satisfactory acceptance of the white ink.

Please place your orders with Bill Burton at the next meeting or by phone or mail to ;-

72 Olive Street
Subiaco W.A. 6008
Phone: 09) 381 4649

We need to know :-

Garment Style
Size (Adult and Child)
Quantity Required
Colour
If not standard, location and number of prints on garment

If you are not collecting the garments personally, then please also include your mailing address and cheque(payable to the group) which includes postage and packaging charges as detailed in the last Bulletin.

If you have lost or misplaced last month's Bulletin, then please contact Bill as above

FIELD TRIP REPORTS

Please don't forget to send in reports of all your orchid hunting field trips.
We want to hear all about the trips that group members are making, not just the official field trips. The reports are a very useful tool for other members to use to plan future field trips and for you to report on your discoveries.

Field Trip reports don't have to be long and witty, so don't feel daunted. A brief description of locations visited and the orchids found is all that you need to supply. Of course, long entertaining stories will also be reproduced.

MAY GUEST SPEAKER RON HEBERLE

Ron Heberle was Guest Speaker at the May General Meeting and his topic was *Caladenia Species and Their Presumed Hybrids -- A Selection.* As usual, Ron's talk was lively, entertaining and spiced with a little controversy and a lot of food for thought. Ron presented some thought provoking arguments and illustrated them with a collection of high quality slides. Unfortunately, we were unable to record all of Ron's talk as the tape ran out before he finished, however we can present a good deal of it. I hope Ron will accept my apologies for being unable to reproduce his talk in entirety, and I hope this has not detracted from his overall message.

CALADENIA SPECIES AND THEIR PRESUMED HYBRIDS -- A SELECTION

Ron Heberle

Good evening fellow members.

I reached the age of discretion last December (and it takes a long while these days). I have a ten year plan. I am going to endeavour to reach the next ten years.

If I can learn as much in the next ten years as I have learnt in the last ten years, I will be very, very pleased, and I can see no reason why I shouldn't. The learning process with orchids is a continuing thing from when you start to when you finish, when you go underground. There is no one who is a full bottle. We have a few people who think they are, but they are not. No one can say that "*so and so, so and so, so and so*" and that there is no argument.

What we need to be getting involved in is debating the decisions made by these people and come up with a consensus within our own group. I have been involved with 17 different professionals in the last 25 years. Everyone of them sought my assistance. I didn't approach anyone. I didn't offer to do anything but they all approached me for some help in various research programs that they were proposing to do or were involved in. I have always accepted the opportunity, in the hope that I would get something out of it myself. I was prepared to give these people what they wanted, what I could give them, what was available or whatever, but I hoped I could get something out of it myself.

Unfortunately the professional sector doesn't see it that way. Many of them believe in taking all and giving nothing. Although, it takes you a few years to find out those sort of people. In my case, I withdraw my support. The net result is that over that 25 years some people have dropped out because they have achieved what they wanted to, some of them are still going, but to a lot of them I simply said "sorry, I've got other projects of my own and I am too busy".

I am just mentioning this because I don't think that the professional sector in Australia on orchids has achieved anything like what they should have. Unfortunately we are the meat in the sandwich, the people in between and we tend to hang on to every breath and accept everything they say and then try and fit it in with what we see and we sort of know, but we can't do it, we just can't do it. If people said "we have only **known** them (the orchids, that is) to do this and we have only **known** them to flower in this period" and if they weren't **definite**, well then maybe it would be acceptable. But they don't, they make definite statements and I would suggest, having had this sort of experience, that you all should beware of anyone who makes a definite statement about orchids.

Orchids are very clever plants, very clever plants indeed! They have been around for a long, long while and they are still going strong. All over the world, people like us are still trying to learn something about them.

That's just a brief introduction. Now I want to get on to my program tonight. Most of you would be aware that I had a paper on the *Caladenia* Hybrids published in the Bulletin a couple of years ago. It was something that I wrote after many years of research and it was published in-1982. In fact I had finished all of the research in 1979, but I had a lot of problems in getting it published.

I wouldn't have published it for some years later, but I had a trip over east and I met a few people and I showed them a few of these presumed hybrid slides. Some of them were big names in the Australian Orchidaceae world and they suggested that I should publish what I knew then and then follow it up ten years later with another paper, instead of hanging off for the big killing like Stephen Hopper and Andrew Brown have done.

It would have been far better if they had published ten or twelve orchids at a time as they went along and we would of had something. We still haven't got anything and there have been noises being made about this Taxonomy since about 1979.

We still haven't seen it yet. We have seen illegitimate publication of some of them in the *BOOK*, but that has no standing in the orchid world. Until these papers are validly published in a recognised orchid journal and the manuscript meets the criteria which is laid down by the **International Bureau of Orchid Nomenclature**, it is not valid.

Although you people have been using all these names, it is quite unethical to do that. Not only unethical for you, but also unethical for the professionals and it was also unethical for those professionals to have prematurely released all that.

I am sorry they are not here tonight, it would not have stopped me from saying what I have said. They know my opinion. I've given it to all of them. But that doesn't deter people. Very ambitious people tend to just gloss over and bend the rules to suit themselves.

I had a trip east last year and everywhere I went people were saying "what a shocking thing it was that all these orchids have not been validly published". What could I say? I just had to agree with them. I have people to whom I correspond with overseas in America, England and Europe and the book has been sold in all those countries. People have bought it everywhere and when they have found out that it was invalid, they were appalled. It has never happened before, never happened before.

I don't want to dwell on that. I will just get on with the program tonight.

So if you have read that paper and of course I have had another 13 years of research since that time. As I mentioned earlier I am learning more every 10 years than I did in my previous 10. So I know a little more about *Caladenia*'s than I did then.

It is a highly complex field. The complexity cannot be overstressed and it is impossible to make a definite statement about most of them. That is why they are called putative hybrids, which means presumed and although there is a lot of talk these days about synthesising them, that is cross pollinating by hand, collecting seeds, flasking them and then growing them on to flowering stage, this is not happening! It has been talked about, but it is not happening.

I spent some time today with Harry Lodge who is a long standing friend, we went to school together, and he was mentioning that epiphytes were being crossed, the seeds are being flasked and what do they get? They get a flask full of all different looking orchids from the same pod when they have been crossed. I mean that is transferring the pollen from the pollinia to the stigma on the parent plant. You would expect that it would produce something similar to the parents but it doesn't.

I haven't tried any of this but last year we had a visit from Warren Stoutamire who some of you would have heard of. He is an American biologist and he is the chap who probably made the first break through, or one of the first, in pseudo-copulation of orchids and the relationship between orchids and insects where pollination is achieved. In the pseudo-copulation of course, the orchids are very cunning, mimicking a female, or they give off a pheromone, a gaseous vapour which is similar to that of the female insect when she is in season. The male insects are tricked into mistaking the orchid for the female and they attempt to mate with the orchid and they cross-pollinate them as they go from plant to plant.

Warren Stoutamire did a lot of work and has published quite a few papers on this. When he was over here I asked him if he would object if I made those papers available for publication in our Bulletin but he said "I would prefer you didn't" because he was going to have to re-write them because he has had to change all his ideas. The way he wrote them about 10 - 15 years ago is not quite right, so he doesn't want them reprinted. When he does re-publish he will let me have the papers and I will make them available to our editor.

It is a field that is a bit deep for most of us, but it is something that we have to think about and we all have to look into because from the Bulletin I am conscious of the fact that group members are constantly finding orchids that are presumed to be hybrids. They are finding orchids that they cannot identify, they do not fit in anywhere and they probably are hybrids. I do not know.

I have a list of about 60 presumed hybrids that I have not got a clue about and I get more every year. I can presume one parent and the other parent is entirely obscure. I showed 50 of these to David Jones and Mark Clements when they were over here 2 years ago. They visited us in Albany for quite a few days and one night we spent 2 1/2 hours looking at them, and discussing them, and at the end of it I said "Well" and they shook their heads. They said "Most of these defy separation". In other words, as qualified, professional, experienced people, they didn't have a clue. We will see some of these tonight.

I want to begin with making reference to a paper that Stephen Hopper published in the Bulletin in 1979. It was an excellent paper. As with all of Stephen Hopper's work, it is very professional. It was a little bit deep for some of us, maybe most of us, but there was some quite good stuff that we could get a hand on in it. I want to refer to that before I go on with my program. I tried to see Stephen today but he is away somewhere and I couldn't catch up with him. I wanted to get his sanction to use the paper. Not that I have to do that, it is just common courtesy if you can. If you are going to refer to somebody's paper then you say "Do you mind?". Frankly, when anybody publishes a paper, that person is accountable and answerable for what is written. Whether they want it or not they have to expect that it will be debated. Some people will agree with it and some will disagree with it and this is a good thing because it makes you think and that is what I am going to try to do tonight.

I am trying to make you think about *Caladenia* hybrids specifically, mainly because there are more of them. There are more *Caladenia*'s than any other species, so there are more hybrids. I am only going to extract little snippets out of this paper. There are 4 pages of it.

It introduces the subject and mentions how difficult hybrids are to identify and he mentions that he did a thesis for his university doctorate where he compared hybrid kangaroo paws and 4 hybrid orchids. He said *"subsequently I have maintained interest in Caladenia hybrids and attempted to note details of any putative hybrids encountered in the field. I am keen of hearing about hybrids encountered by our group members. At some stage in the next two years I plan to write up observations on Western Australian Caladenia hybrids in a form suitable for publication in the Australian Journal of Botany."*

I don't think that happened.

He said "*natural hybridisation has fascinated botanists for 200 years. Earlier work on experimental hybridisation in Europe was instrumental in demonstrating that plants are sexual. It requires both pollen ovals to produce seed in most species. Over the past 50 years, resurgence of interest in natural hybridisation has occurred in concept of the development of powerful new insights in the process of evolution. It is now known that natural hybridisation may play a significant part in the evolution of species*".

Well that sounds all right, but from my research, the amount of work that has been done in the last 50 years by professionals in natural hybridisation in *Caladenia* is minimal. I cannot find a paper and I am in contact with all these professionals and I have written to them and asked them can they name some people who have published these papers and what where the publications. I can't find any so I think he was a bit over enthusiastic there.

It goes on to say "*Hybridisation can give rise to new species*".

I agree with that. The process is much quicker. Evolution takes thousands of years, maybe hundreds of thousands. But in hybridisation it could happen in 100 years and we are increasingly finding stabilised colonies of hybrids that are apparently fertile and are breeding. They all look similar.

"*Increasing the genetic variability of species and thereby allowing them to colonise new habitats or persist in changing environments*"(well all orchids do that. It does not have to be a hybrid to do that.)"*producing selected pressures that sharpen their reproductive barriers between plant species*" and all orchids do that.

He lists a whole list of factors to aid in the identification of the hybrid and its parents. I'm not going to cover them all because I think some of them are highly speculative.

He listed "*Occurrence in the wild of both suspect parents*". Well of course! This is a matter of course.

"*Occurrence in disturbed habitats*". That was once considered to be the major influence, no longer at all! Certainly some hybrids do occur in disturbed habitats but the majority occur in the natural habitats.

"*Occurrence of insect pollen vectors that move freely between plants of both suspected parents*". Of course! It could not happen if they did not.

"*Close agreement between the features of experimentally synthesised hybrids and putative natural hybrids*". I don't know. I think there would be but it has not happened as far as I know. It certainly hasn't happened in Western Australia.

This is the clincher. "*The greater variability in the progeny of natural hybrids than in those of even the parental species*". The variability of the species is infinite. Not just with orchids but with everything. Its infinite! There is no end to it! To say it is more so with hybrids is probably correct.

So what I have been emphasising is the complexity, which has doubled up and tripled up and so on with hybrids, because they are far more virile. They have something which is called hybrid vigour which normal plants do not have to the same extent. He gives a list of about 15 species, which I'm not going to read out, which are presumed hybrids. I understand that most of these came from Andrew Brown. I'm disappointed that he is not here tonight.

Looking through them, there are two that I have not seen. That doesn't mean a thing! Just because I haven't seen something doesn't mean it doesn't exist! With many professionals, the reverse is the case. If they have not seen it, it does not exist. Even if you show them the pressing and a slide, it still does not exist until they see it! They say "I must see it!". Well I don't accept that philosophy and I hope you don't either.

There are a couple here, *Caladenia filamentosa* x *C. dorrienii*, I have not seen that, and *Caladenia patersonii* x *C. filamentosa*. I haven't seen one of those either.

There is one listed here, *Caladenia filamentosa* x *C. sigmoidea*, and that is quite a story. I gave a specimen of that cross to Noel Hoffman. Noel Hoffman showed it to Andrew Brown and Stephen Hopper. At the time they had not seen it, but one or other of them has written about this particular hybrid being rather prevalent. Well, that is okay, it may be, but I have not seen many of them.

It goes on to say "*they do have intermediate morphology features*". Of course! All orchids do!

"*They do usually occur in mixed stands containing suspected parents.*" Of course! They have to!

"*Some populations do show greater variability in morphological features.*" Of course! None of this is peculiar to the hybrid, this is normal!

"*Caladenia huegelii*" (which is now back to *C. pectinata* which it should never have left)"*provides an interesting enigma amongst spider orchids. It has some features typical of bee pollinated species and some features which are typical of pseudo-copulating species.*" This comes down to the fact that Warren Stoutamire and other professionals have come to the conclusion that there was a specific pollinator for specific orchids. A one-to-one situation where just one specific insect pollinated one specific species.

This was accepted worldwide. They were very surprised when they had it put before them by a chap that lives in Albany, that he could produce hybrids between the so called one-to-one orchids and with the ordinary run of the mill orchids that were pollinated by non-specific insects.

Now that's accepted today. But we shouldn't accept everything that is put in front of us by professionals, we should question it, in the light of our own knowledge and the light of the collected knowledge that we have in a group like ours. Group members have an enormous amount of knowledge collectively. Some have more than others because they have been at it longer. Sum up all our knowledge and it will match any professional in Australia.

Well that information given there is hard to accept because those features are common to all orchids, not just hybrids.

I mentioned my own paper and I just want to read one or two passages from it.

"*So far, the most productive colonies have been those that grow adjacent to rivers, streams, lakes and swamps - and on, and around granite rocks where insects are very active.*"

"*The project was undertaken with the expectation that hybrid progeny would generally exhibit prominent structural features of one parent rather than the other and that possibly, the pod-parent or the pollen-parent would be dominant, but this has proven not to be always the case. Apparent indications are that the cross between pod-parent and pollen-parent (A x B) and the reverse (B x A) produces two distinct and different hybrids may well be evidence merely that one parent is more dominant than the other, or that some back crossing has occurred, or that the hybrid has "selfed" and thrown to one parent or the other. These are distinct possibilities in hybrid "swarms"*....."

I don't know why they call them "swarms" but that is how they refer to them. They don't swarm as far as I know, not like bees anyway. That was pure conjecture on my part. What I am saying is possible but I do not know. My research up to that time had suggested that that was possible because I was trying to ask myself questions about this. "WHY?" "Why did I see this happen?", and so on. Well, I can't answer that.

I continue to write "The project suggests that *Caladenia ericksonae* and *C. triangularis* are in fact hybrids". That was not accepted then but I noticed that it is in the *BOOK*. It took them 10 or 12 years to at least accept that. I might add that a select hierarchy of expert opinion in Western Australia rejected this paper. Their response was to some people in the eastern states who thought it was a fairly good paper , "Heberle dreams most of this up, we haven't seen them", and I agree with the last part.

In the summary, the table for preliminary hybrid figures suggests so and so and so. Out of 40 *Caladenia* species, that was all there was in those days, 26 hybridised and out of 10 varieties, seven do likewise. There remained at least 19 collections of possible hybrids that further research was required to determine the parents. I told you that it is up to about 60 now. I don't expect to unravel those ever, not even have a stab at it.

"*This report is tentative and preliminary and is made in the hope that other enthusiasts may be influenced to do similar work in other areas. A combined effort should eventually bring into clearer focus natural hybridisation in Caladenia.*" I don't think that has happened either. I hope it has, but I haven't heard of it.

Well so much for all that, we can get on to the slides. A lot of them are old paperbacks that are fading. They are close to 20 years old.

I am having difficulty in relocating the orchid to re-photograph, which is par for the course. We all have that. We find something somewhere and we go back and we can't find it, and never see it again. But we are finding a lot that we have never seen before. Last year was possibly the best year ever. Don't ask me why, I haven't got a clue why we have good years for orchids and bad years. Sometimes it may be because of lack of rain, this year might be a bad year, and other times we get plenty of rain and everything and yet we still have very poor orchids. You have to ask the orchids those questions because I can't answer them.

AT THIS POINT IN RON'S PRESENTATION HE COMMENCED SHOWING SLIDES AND THE FOLLOWING COMMENTS ARE MADE IN REFERENCE TO THE SLIDES PROJECTED. HOPEFULLY WE CAN GET AN UNDERSTANDING OF RON'S MAIN POINTS FROM THE NARRATIVE THAT IS REPRODUCED WITHOUT THE BENEFIT OF THE ACTUAL SLIDE FOR ILLUSTRATION. OF NECESSITY, SOME OF RON'S COMMENTS HAVE BEEN OMITTED WHERE THEY ARE DIRECTLY RELATED TO THE SLIDE THAT WAS BEING PROJECTED. ...ED.

This is *Caladenia radiata*. Incidentally, the common name is not the "Ray Spider", it is "Daddy Long Legs". Always has been "Daddy Long Legs", but for some obscure reason the authors of the *BOOK* decide to put their own brand of common names on the orchids, which I suggest you ignore and give them your own. If they think they are entitled to put common names on orchids then so are we and we should do that. A very virile orchid that hybridises with any number of other species and is very common. Incidentally my wife and I took Hopper and Brown out to the first of these they ever saw back in the late 70's. They are very common. They grow within about 40 km of Albany and are extremely common towards the west. In some swamps they flower late. They flower in thousands.

This is *Caladenia pectinata*. This is possibly the true *Caladenia pectinata* that Rogers named from Albany. This grows right in Albany, all over Mount Clarence and all over the place. A very large and very handsome plant. But *Caladenia pectinata* has infinite variations.

White spiders are legend. You will find a different white spider wherever you go. I don't think naming ten or twelve, mostly from up north, is going to help much. I think if you are going to name them, you may as well name the lot and you would need to name at least 50.

This is the orchid that is going to be named after Andrew Brown, it has been called *Caladenia brownii*. And this shows the variation, as all of these were growing together in one location. When you get this sort of variation and when you get them crossing with others and the hybrid vigour comes in you are going to get an orchid that is very, very difficult to put a handle on.

Here is an attempt to fit *Caladenia pectinata*, *C. radiata* and the hybrid in the middle. See the wavy bits coming in there. These are the sort of things you have to look for with hybrids and of course the tip of the labellum, the fringing and the calli. You have to look at all of these features.

Here we have quite a different hybrid simply because the *Caladenia pectinata* is different.

These orchids are similar but their colour is quite different. Incidentally, colour, which is an unreliable guide as far as species are concerned, as you are all aware, comes through fairly well with hybrids. In other words, if it is a white hybrid, it will come through as white, if it is pink hybrid it will come through as pink, and a brown will come through as brown and so on. Not all the time, but mostly!

There is a bit of repetition here because I tend to photograph what I find in one location and you find the same orchids in another location with different ones so you get the same orchids coming up in the multiple shots. These are taken only for research purposes.

You can learn from your slides. If you have got an evening when you have got nothing better to do and if you have your own projector. What I do when my wife wakes me up from in front of the TV (I can sleep through the best of it) and gives me a cup of tea, I adjourn into the lounge room where I have a projector set up in front of a screen and I run through a magazine of slides. I look at them and I think about them and I learn from them.

The *Caladenia radiata*'s are reasonably stable. They don't have anything like the variation that the *Caladenia pectinata*'s or white spiders have. This is probably the reason why they hybridise more readily with the others, probably.

Caladenia ferruginea gets in on the act too. You would not distinguish between any hybrid between *Caladenia ferruginea* and *C. pectinata* because they have the same morphology. They have clubbed sepals and non-clubbed petals, they have the fringe and four rows of calli, and so on. They are more or less the same colour and they have the same tip to the labellum. So it would be very, very difficult to identify a hybrid between either.

Two of the late flowering *Caladenia*'s. These flower all over the place. We found some between Armadale and the Halfway House a couple of years ago in mid December. We stopped for a cup of tea and went wandering amongst a couple of white gums and there they were. The manuscript name, the illegitimate name, is *Caladenia serotina*, which means late flowering.

This one is going to be called *Caladenia pholcoidea*, these are quite legitimate to be named. *Caladenia pholcoidea* is a spider that has a small body and very long legs. You can get these with 8" sepals.

That is *Caladenia corynephora*, very common

around Albany. I can recall Wayne Merritt telling me that he and a relation of his canoed down from Bridgetown to Augusta and saw them flowering along the banks all the way and yet we had in the first book that the group published, a paper by Steven Van Leeuwin, he had them on the rare and endangered list. They grow in millions.

You see, these people, if they have not seen something in thousands it is automatically rare and endangered. That wouldn't worry me, except for the fact that since Hopper got in a position of authority he kicked up the penalty for doing anything to destroy these things from $1,000 to $10,000 which is absolutely ridiculous. Most people would not know that they are.

In that paper that I wrote, apart from the early and late flowering *Caladenia*'s, the rest of them seem to be capable of hybridisation. I make that definite statement and of course smart orchids have proved me wrong.

That is a hybrid between *Caladenia corynephora* and *C. radiata*. We have only ever seen two specimens of these, that doesn't mean anything. Just because we have only seen 2 it does not mean there are not 1000's somewhere else. We look at less than 1% of what there is to look at. We have been researching Mount Clarence for 35 years and we have only looked at a fraction of it. Every year or two we find an orchid growing we have never seen before.

You just cannot research even a hectare of bush unless you have 30 or 40 people and drew it all up in squares and run lines across with bits of string or wool and then walked along those lines. Even then you would only get what was flowering at that time of the year and during that particular year.
This does not mean that what you found then is all you are ever going to find.

These are great big orchids, bigger than a white spider. The white spiders grow with them. They always grow in clumps. They are huge big things and they are the spitting image of a white spider except for the colour(pink). These come from around Cranbrook, and we find the odd clump every few years in different places, but only ever one clump. We have never seen more than one clump flowering and they usually flower with white spiders. There is nothing else there that is pink except heather, and heather hybrids are nothing like that. It could be *Caladenia chapmanii* but *C. chapmanii* flowers such a long way away from where these are and also *C. chapmanii* flowers a lot later.

Not that that means anything! The seeds could have blown for 100's of kilometres, which they do, and these could have colonised from somewhere else.

There was a very, very capable amateur botanist called Robert Fitzgerald. He was a draughtsman by trade and he painted the most beautiful plates of orchids, accurate to the minutest detail. He made a visit to Western Australia and he did a lot of botanising around Mount Barker, across to Bunbury and out towards the Stirlings and he named about 8 or 9 of our *Caladenia*'s.

I used to think I knew what a *Caladenia longicauda* looked like but having Hoffman and Brown's book I do not know now. I understand now, that *Caladenia longicauda* grows in one swamp out woop woop somewhere. Well that's a lot of rot! It grows all over the state! But because of geographic variations, which are ignored by professionals, they are different. A white spider which grows at Kalbarri will be entirely different to one that grows at Esperance because of geographic variation.

I'm not going to go into that here because it is a fairly deep subject but what it means is that whatever the difference is in the environment, the weather, the latitude and the longitude, the orchids will be different because they adapt to that particular area. So they will all be different and many of these have received names.

Caladenia lobata, which Fitzgerald said was the most beautiful and attractive of all of the *Caladenia*'s and he was so right. It is very common and flowers from Bunbury across to the Stirlings. A big block from Franklin up to Tenterden and particularly common around Mount Barker and the Hay River. It hybridises like mad.

AT THIS POINT THE TAPE RAN OUT IN THE RECORDER, SO WE ARE NOT ABLE TO REPRODUCE THE REMAINDER OF RON'S TALK. I SINCERELY HOPE THAT THIS HAS NOT DETRACTED FROM THE MESSAGE THAT RON WAS PRESENTING TO US. ...ED.

ENVIRONMENT MAGAZINE

Some Group members may be aware of a magazine title *ENVIRONMENT*, which is published quarterly by The Environment Centre of WA. This publication is a forum for discussion of environmental and related issues and welcomes articles, letters and poems with an environmental theme.