

# Class 11 Botany Camp – an Approach

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The world of plants, so essential in human life, can form a moving part of any person's education. In Waldorf Schools, apart from being part of the story curriculum, the plant landscaping of the school grounds, the gardening curriculum and the chemistry curriculum, plants form the subject of one or two block lessons in the primary school in class 5 and 6. After this introduction to Botany well described by Grohman (1996), children learn about plants practically in the gardening lessons which are part of the curriculum from class 6 through to class 10. (Stockmeyer, 2001).

In class 11, botany returns to the curriculum with an interesting suggestion from Steiner: "Introduce a cosmic cell biology based on the cryptograms" – plants like algae, lichens, fungi and moss among others. (A topic to be explored another time)

In class 12 the suggestion from Steiner is for a botany of the plant families. As the school year in Australia, starts near the end of summer, the vintage season – yeast is active in the class 9 wine vats (chemistry) and there is surplus for the year 11 students to study under their microscopes. Towards the end of the class 11 year (nearly class

12), Spring comes around with its rich flowering period from September to November. It is a good time for taking the study of the plants further. The course has its emphasis in the processes of growth, morphology, metamorphosis, and ecology. The processes of germination, shoot formation, flowering and fruiting are studied using the Goethean concepts of metamorphosis, polarity and enhancement.



Fig. 1: Metamorphosis of the Rose leaf to sepals, petals and stamens

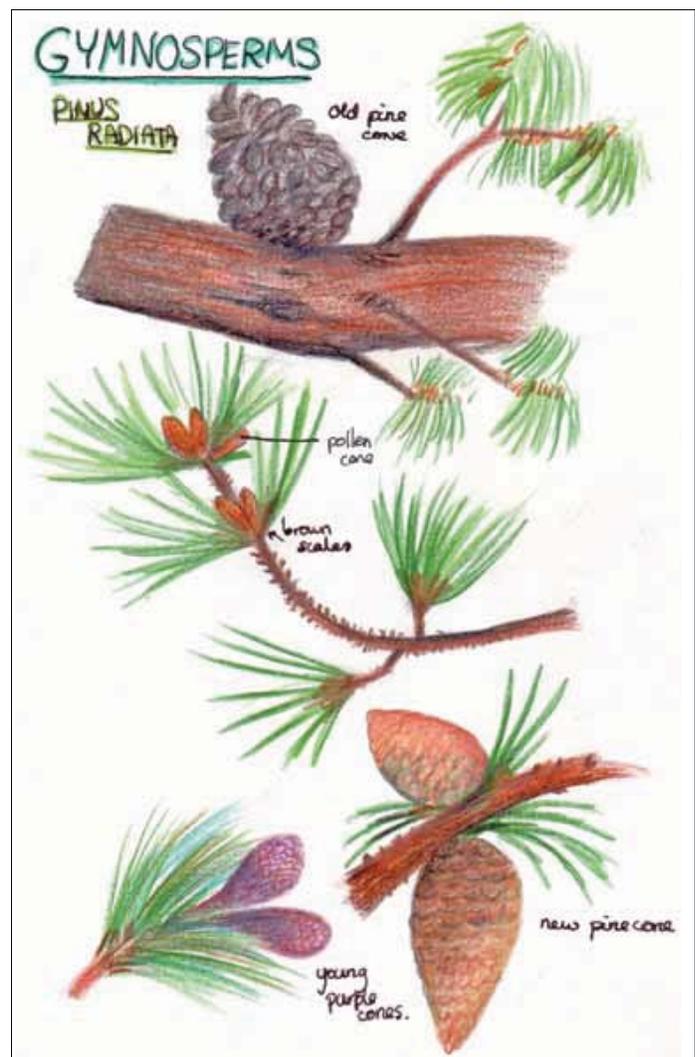


Fig 2: Metamorphosis of the organs of a Pinus

The annual, dicotyledonous flowering plants are used as a starting point for this study followed by a study of the life cycles of conifers (Pinus) and ferns, also from the point of view

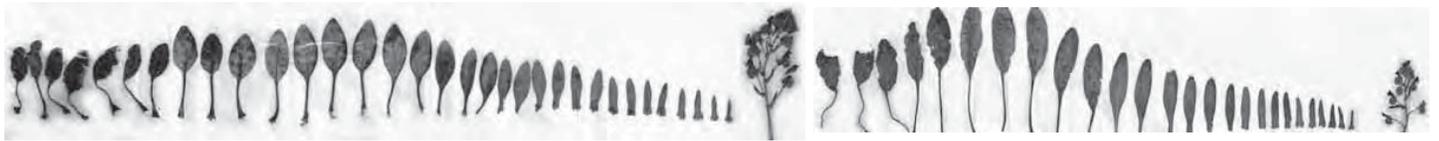


Fig 3 & 4: Leaf series of Salvation Jane, *Echium sp.* In sunlight (left) and shade (right)

of metamorphosis. They learn to understand these processes so that they can be viewed as proceeding out of a wholeness in which both the temporal and the spatial are encompassed.

They undertake a short project in this time, which involves comparing leaf metamorphosis series of the same species growing in different environmental conditions.

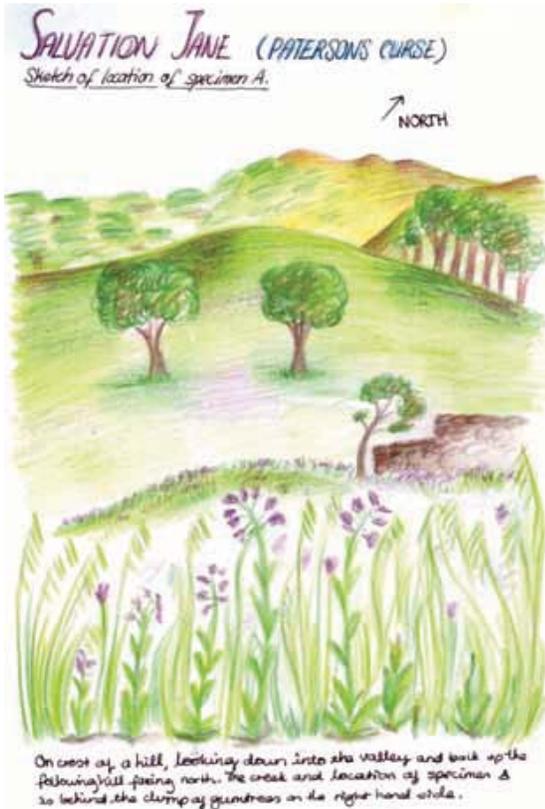
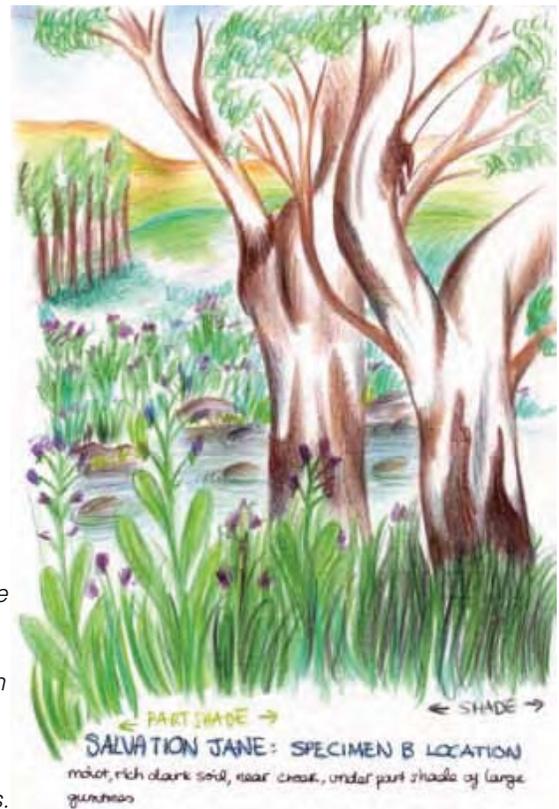


Fig 5 & 6: Salvation Jane *Echium sp.* In two environments; Sunshine (left), Shade (right) by Geraldine Herweijer, class 11. The students learn an appreciation of the unity of organism and environment by doing their own plant project work with plants and also by a study of plant communities.



Following the botany work based at school the Mount Barker Class 11 students go on a two week field trip into the Blue mountains during the Spring time.

Each day a new plant community is visited. The morning is spent learning to use a simple plant key to identify all the plants growing in that area. This involves close and detailed observation. The morning starts off with a time alone. Each student also spends half an hour alone at the site to listen to the sounds of water, the birds and notice the small things that comprise the "landscape" of a site. From this half hour's time they write a description of the site as well as a poem or poems, which goes beyond the observer description to allow the observers to express something of their own

relationship to the site. The rest of the morning is spent learning to use a simple plant key to identify the plants growing in that area. This involves close and detailed observation. After lunch the students each choose a particular "composition" from the location and paint it. Each water colour painting represents 4 to 5 hours work in the field. During the evening, species lists of the days site are collated, poetry is read and shared and students finish their paintings. As the days progress, the students begin to experience how the plant world expresses a different quality at each site. Different species of the same genus appear at different sites.

The week's fieldwork is followed by a 7-day bush walk through the Blue Mountains, with each student carrying what they require for



Fig 7 & 8: Field Work in the Blue Mountains, identification, writing and painting.

food and shelter. During this time they have the opportunity to experience the constantly changing composition of the plant world as they walk through it.

This Botany approach encompasses a variety of styles, including the main lesson style, project work, extensive outdoor fieldwork, a 7 day walk in remote country which traverses very diverse plant communities and landscapes.

*Student response: I feel so blessed with all the opportunities that this education offers me. I would like to express great gratitude to all the people who make possible the camps; who put their necks on the line to give the students such unforgettable experiences. I think it will get harder for such camps to happen because of our increasingly paranoid society. I hope that others will have the opportunity to grow within themselves and within the group as I and others have done.*

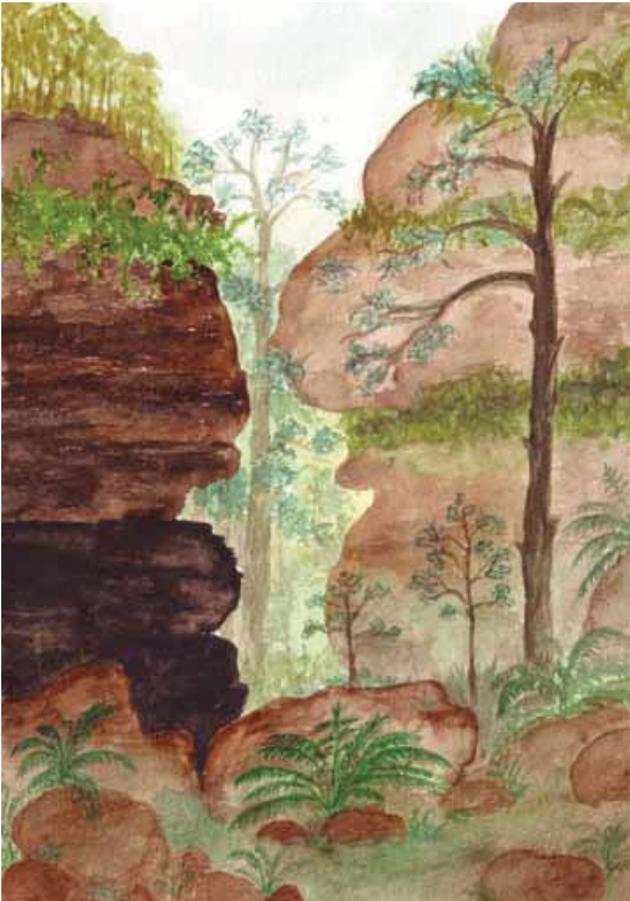


Fig 9 & 10: Water colour paintings of remnant Rainforest Coachwood *Ceratopetalum* (left) and Waratah *Teleoepa*.  
By year 11 students.



Fig 11 &12: Measuring self in landscape.

**Student comments:**

*I think our school and camps give us maturity, common sense, and loyalty.*

*To be able to go out into the wilderness for that amount of time is an experience that not many people will have a chance to share. For me to be able to experience this is priceless. Thank you to the Waldorf school for giving me the opportunity of a lifetime.*

*Camps like this are....priceless, and to be able to live such an experience is a true gift. It gives you a chance to put life into perspective....we are tiny! Opportunities like this are becoming increasingly rare: it is devastating to imagine that some people go through life without 'meeting' and living in nature in this way. To see the magnificence of the Blue Mountains is a real gift – they are ever-changing and awe-inspiring!. I will hold that experience in me forever.*

**A Chinese story about Painting Likeness**

*.....The young man said there are six essentials in painting.*

*The first is called gi (spirit), the second is called yin (harmony), the third is called si (thought or plan), the fourth ying (scenery and effect), the fifth bi (brushwork) and the sixth mo (ink).*

**Resources:**

Bockemühl, J. (1977). "The Formative Movements of Plants" and other contributions from "Towards a Phenomenology of the Etheric World" Anthroposophic Press Inc., Spring Valley, New York.  
 Bockemühl, J. (1981). "In Partnership with Nature", Biodynamic Literature, Wyoming Rhode Island.  
 Grohmann, G. (1996). The Plant (Vol 1) Rudolf Steiner Press, London.  
 Grohmann, G., (1989). The Plant (Vol 2) Bio-Dynamic Farming & Gardening Association Inc, Kimberton.  
 Stockmeyer (2001) ed S. Cradock Rudolf Steiner's Curriculum for Waldorf Schools Forest Row: Steiner Schools Fellowship.

*I remarked, "Painting is to make beautiful things, and the important thing is to achieve true likeness is it not?" The sage answered "it is not."*

*Painting is to paint, to estimate the shape of things, to really obtain them, to estimate the beauty of things, to reach it; to estimate the reality (significance) of things and to grasp it.*

*One should not take outward beauty for reality. He who does not understand this mystery will not obtain truth, even though his pictures may obtain likeness."*

*I asked again: "What is likeness and what is truth?"*

*The old man replied "Likeness can be obtained by shapes without Spirit, but when truth is obtained both spirit and substance are fully expressed. He who tries to express spirit through ornamental beauty will make dead things."*

Collected from the Chinese garden, Darling Harbour, Sydney.