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KALORI

October '70

Hardenbergia violacea.

Lower Blue Mountains Wildlife Conservation Society

CONSERVE, PRESERVE, INVESTIGATE, EDUCATE.

Kalori is published monthly by and for the members of the Lower Blue Mountains Wildlife Conservation Society.

The aims of the Society are, briefly, to:-

1. Educate the members and the community to the cultural values of nature.

2. Work for the reservation of areas of natural environment for the refuge and breeding of indigenous flora and fauna.

3. Carry out research into the distribution, population and species of flora and fauna in the Blue Mountains.

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This month we have completed four years as a Society. At the moment we have three Life Members, thirty Members, three Associate Members and three Junior Members. This is not a total of the active members but of those who are financial. The figures have not altered much from our first year.

Since last October we have passed many resolutions and written much correspondence. Briefly, we have dealt with:-

1 Colong Caves mining
2 South coast chipmill leases
3 City Council Tree Preservation Order
4 Glenbrook Lagoon Wildlife Refuge
5 Penrith Sewage Works Wildlife Refuge
6 Parliamentary Select Committee on Wildlife Conservation
7 Mount Hay - Mount Whitton fire trail,

and the usual business correspondence.

Active projects have been:- the ecological survey of Blue Gum Creek, which is progressing slowly; trapping, reports of which have appeared in Kalori; and the construction of a nature trail at Springwood Primary School.

We have not been inactive and probably not altogether impotent, although apart from the trapping I am afraid that there is nothing which distinguishes us from any other group of ratbags.

Because it became impractical to hire a public hall for meetings attended by half a dozen people we decided in April to hold meetings at members homes. This has been done up till now, but this month the Annual General Meeting will be held in the Springwood Civic Centre - upstairs meeting room - on Thursday 8th. October, at 8.00 PM.

G.Croghan
Secretary

AIR POLLUTION

-- extract from article by Ian Davies.

(Ian Davies is now a Ph.D. student in Astrophysics at Sydney University. He arrived from Adelaide University in 1968, where he obtained his Honours degree in Physics. At the moment, he is deeply concerned with the problem of air pollution and is carrying out private research on the subject as well as working on his Ph.D.)

As the Australian public is rarely given any more information about air pollution, other than the blanket statement that in Australian cities the average level of atmospheric pollution is low by world standards, it is hardly surprising that little concern is shown for either present or future levels of pollution.

After studying the air pollution potential of the Sydney metropolitan area and plans for the expansion of the area over the next thirty years, I have come to the unavoidable conclusion that this area is in very real danger of "smog" of two kinds, each of which now has a well documented history.

The term "smog" was originally coined to describe the combination of smoke and fog which typifies the air pollution of London, but it is now also used to describe the photochemical pollution which has been experienced most severely in Los Angeles. Both types of pollution are intensified by the occurrence of temperature inversions, during which a layer of warm air forms at a higher altitude and traps a layer of cooler air relatively close to the ground. Heavy pollutant concentrations then build up in the stable air beneath the inversion layer. The whole east coast of Australia and Canberra are subject to regular temperature inversions, and together with our abundant sunlight this could lead to a photochemical pollution problem.

The more dramatic type of air pollution episode has resulted from either industrial or domestic pollution or a combination of both. Some of the more outstanding examples are as follows: a series of episodes in London beginning in 1873 ended in the smog of 1952 in which at least 4,000 people - mostly young children and older people - were killed; in 1940 Donara in the U.S.A. 6,000 people developed respiratory symptoms, and 17 died; and in 1953 in New York 200 deaths resulted from a build up of industrial pollution. Many people suffering from diseases of the respiratory cardiac systems struggle through the episode, only to die soon afterwards. Both repeated exposure to smog and prolonged exposure to low levels of

pollution are considered to play a part in causing chronic bronchitis. Children may be affected long after the episode, as a striking association has been found between lower respiratory tract infections and pollution seen in the first year of life. There appears to be a world-wide corelation between high levels of air pollution and a high incidence of a number of diseases.

Photochemical smog is the result of a series of complex chemical reactions caused by the action of sunlight on a combination of oxides of nitrogen and hydrocarbons. Products of the reactions are ozone and a number of organic nitrogen compounds. The smog reduces visibility to a marked degree, and causes severe eye irritation, respiratory tract irritation, plant damage, and cracking of rubber products. In Los Angeles the ozone concentration frequently exceeds the occupational threshold limit of 0.1 ppm (parts per million) for an 8 hour day; emphysema has been produced by nitrogen dioxide exposures in rats and mice, and is a rapidly increasing cause of death in California.

Carbon monoxide does not take part in the photochemical reactions, but it is one of the pollutants causing the most concern. About 60% of the total pollution of approximately 400,000 tons a day (in 1966) added to the atmosphere of the U.S.A. is due to motor vehicles, and two thirds of this is carbon monoxide. In sufficient concentration, carbon monoxide has a toxic effect on the body because it reduces the oxygen carrying capacity of the blood. Although the U.S.A. standard has been set at 20 ppm, a survey carried out in Sydney revealed the average concentration in some city streets during peak hours was 50 ppm with a peak of 80 ppm. Most people experience dizziness, headache, lassitude and other symptoms at 100 ppm.

The level of lead pollution in the air is also a cause for concern. This lead originates almost entirely from the lead alkyls added to petrol to increase its anti-knock value. In most U.S.A. populations studied, the range of lead concentrations in the blood for those not occupationally exposed has been about 0.015 to 0.045 mg/100 ml of blood, whereas clinical effects of lead poisoning have been found at levels above 0.08 mg/100 ml of blood. There is a very real danger therefore of harmful effects from long periods of constant exposure.

No one in his right mind would suggest that both types of air pollution episode should not be avoided at all cost. It is my contention, however, that present policies, or lack of them, are hurtling us headlong towards a situation where we will be in imminent danger from both. All of the facts which I will use to support my argument have been gleaned from the Proceedings of the Clean Air Conferences held at the University of NSW

in 1965 and 1969, and from the Report from the Senate Select Committee on Air Pollution printed in September 1969.

An officer of the N.S.W. Bureau of Meteorology summarized his contribution to the 1965 Conference in the following manner - any substantial increase in pollutant producing sources in the Sydney-Mascot and Parramatta-Sydney sections will create a major problem in winter months, as pollutants tend to increase the duration and frequency of fog, and if any great increase in industrial sources occurs in inland sections, then, due to the high frequency of calm conditions in these areas, dangerously high levels of pollution and high smog incidence could be expected in the future. In the 1969 Conference it was pointed out that pollutants from sources in the Cumberland Plain drain into the Parramatta River valley under inversion conditions, and are carried over inner city areas, thus adding to the pollution already present from sources in the Sydney-Mascot and Parramatta-Sydney sections. Most of the existing and proposed industrial sections lie in the valleys of coastal rivers and inland tributaries of the Hawkesbury-Nepean River System, one of the worst possible places from an air pollution standpoint for three reasons: these areas are all less than 50 feet above sea level and more prone to dangerous concentrations of air pollutants than places at higher levels; the valleys of coastal rivers are strongly influenced by a reversible land and sea breeze circulation which moves pollutants to and fro without removing them; and none of the industrial chimneys in these low lying areas penetrates the inversion layer which occurs frequently, and consequently all pollutants discharged are trapped in the stable air below the inversion layer.

The Sydney Region Outline Plan envisages that growth will initially take place along a predominantly east-west corridor as far as Penrith. A population of at least five million people is expected by A.D. 2000. It is proposed that the urban corridors extending to Penrith and Campbelltown should include industrial areas, and no restrictions on motor vehicles are envisaged even though it is recognised that the County of Cumberland possesses meteorological characteristics liable to induce the build up of dangerous concentrations of industrial pollutants and photochemical smog. The Plan also proposes to set aside an area in the same coastal basin for certain classes of noxious and hazardous industry. Consequently, pollutants in inland areas will occur, and the predictions mentioned earlier are almost certain to come to fruition.

The foreword to the 1969 Conference Proceedings states that reliable authorities have predicted that by 1990 the level of pollution in the Sydney metropolitan area could rise to the level experienced in Los Angeles in the 1950's, a period when

their pollution problem was at its worst. The above prediction could well be too conservative. The traffic congestion problem in Sydney is already serious and will become critical by the time the motor vehicle population has doubled. The amount of pollution increases severely with the increasing congestion, as automobile emissions are greatest during idling, decelerating and accelerating. Sydney has an appreciable proportion of vehicles which give excessive amounts of pollution due to age and abuse. It should also be borne in mind that if growth proceeds until A.D. 2000 as the Plan envisages, growth of the motor vehicle population will continue for many years after the appearance of photochemical smog, aggravating the problem still further.

The effects of photochemical pollution were first noticed in 1945, but the problem was at its worst approximately five years later. It was reported at the 1965 Clean Air Conference that since the 1950's it has been possible for the Los Angeles community to survive only because people expressed themselves so emphatically that crash programs were developed, huge appropriations allocated and expended, and the finest personnel in all pertinent sciences were employed. In spite of the fact that Los Angeles County has had controls on industry for twenty years, has, now, the most stringent controls of any State in the U.S.A., and has had controls on automotive emissions for about five years, the smog problem is still present. Sydney at present has virtually no controls on motor vehicles emissions, no controls on domestic and commercial pollution, and inadequate controls on industry. If we are going to avoid unsatisfactory air quality in a few years time, we must act immediately to prevent any further deterioration. In fact our aim should be to improve present air quality, which compares unfavourably with that of many other cities.

It is obvious that air pollution can be prevented most easily and cheaply in the planning stages, and consequently it is imperative that the Sydney Region Outline Plan be reformulated, with air quality as one of the most important criteria, and not one to be overruled by other considerations such as transport and sewerage.

Pollutant producers should be located on high ground, outside areas where the pollutants will be trapped by temperature inversions. Existing green belts should be retained, and as many as possible located between future residential and industrial areas, as it has been found that vegetation is most effective in trapping the larger particles in the air. The present policy of allowing home units and flats, providing areas of high population density, to be built along principal traffic arteries is criminal to say the least, and should be

discontinued immediately.

Finally, any attempt at solving the problems of modern air pollution is doomed to failure unless it tackles the legal problems involved. There are many deficiencies in the N.S.W. air pollution control legislation.

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An interesting postscript to Ian Davies article is the observation that all is not well on the pollution front in the Nepean basin area. Despite a plea from Baulkham Hills Shire Council for the protection of the Nepean River from pollution, which was published in the Penrith Press some time ago, the pollution of the Nepean River is now well under way. With known polluted tributaries such as Fitzgerald, Boundary and Peach Tree Creeks flowing into it one can easily imagine the smell and the colour of the water which greeted two members of the society at a point below Penrith Weir.

Again it takes little imagination to gauge the effect of a commercial airport in "one of the worst possible places from an air pollution standpoint". This is currently in danger of being placed at Londonderry. Just one of these "progressive" machines need be observed landing for the observer to recoil in horror at the realization of the pollution potential of these planes.

Penrith City Council seems unable to grasp, through the haze of petty regional jealousies, the advantages of "open space corridors" planned by the State Planning Authority for the St. Marys/Mt. Druitt area. Ian Davies gives his thoughts on these corridors in the above article and the aesthetic value of these corridors are incomparable for a growing modern city. Perhaps most of the opposition to the plan was a real reaction to the State Planning Authority's destruction of Council developer's dreams of an expanse of sterile suburbia from Sydney to the Nepean.

.... M. Smithson.

APPLICATION FOR MEMBERSHIP

To the Treasurer,
Mrs.D. Dark,
"Nimaloola",
Russell Avenue,
Valley Heights. 2777.

Enclosed please find the sum of $ to cover one years membership*

Name in full.....

Address in full.....

Occupation.....

* Individuals $2.00 annually or $20.00 Life.
Associates $1.00 annually - subscription to Kalori.
Junior 30 cents annually.
Family $3.00 annually.