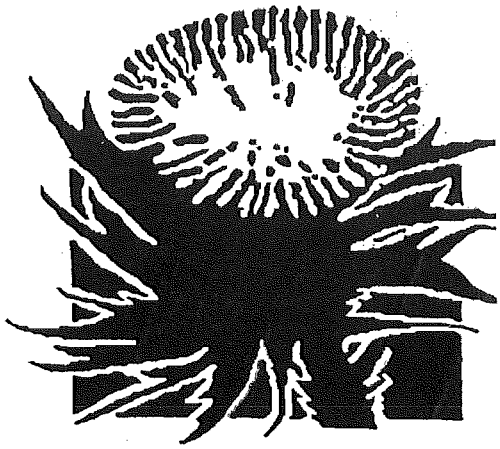

NEWSLETTER

Number 1 March, 1993

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THE WEED SOCIETY OF NEW SOUTH WALES

REPORTS

Biocontrol of Ragwort and Blackberry

Seminar organised by the Victorian Weed Society in late 1992

Biological control programs underway in Victoria to control ragwort and blackberry should not be seen as a signal for farmers to ease up on conventional weed control methods, was a message from the meeting. David McLaren and two other speakers from the Keith Turnbull Research Institute (KTRI) at Frankston, El Bruzzese and Graham Pritchard, stressed biological control must continue to be integrated with herbicides, cultivation and pasture improvement. Ragwort and blackberry are the target weeds for existing biological control programs although KTRI is also examining control for thistles.

While rust will be mainly used to control large infestations in remote areas, smaller infestations in areas with high farming, conservation or aesthetic value should continue to be cleaned up with herbicides.

There are 50 species of insects and 20 fungi in Europe suitable for blackberry control but the useful species for Australia are limited because of their effects on cultivated berries. Existing rust outbreaks on cultivated berries can be controlled with fungicides.

The legal rusts released in 1990 and 1991, together with the illegal rust released in 1984, are now widespread in Victoria, New South Wales and ACT. The only difference between the two rusts is in their genetic make-up. There are no visible differences under the microscope or on the plant.

Rusts can cause up to 90% defoliation depending on climate and the speed of growth of the plant. The rust attacks new growth forcing the plant to draw on its root reserves for survival.

Trials on the effect of herbicides on blackberries infected by rust have turned up some encouraging results. Kill rates have been as effective on plants defoliated by rust as those unaffected. Six of the eight common species of blackberry are susceptible to the rusts. Whether this will apply to the new rusts is unknown. If the new rusts do prove to have a greater defoliation effect, the one option could be to use root uptake herbicides, but these are generally persistent in the soil and may affect other crops.

WSSA Meeting in Denver and Visit to USA in February 1993

Report by Leon Smith

Symposium on "The Minor Use Dilemma : Problems and Solutions"

This symposium highlighted similar problems we have in Australia. Co-operation and improved liaison with industry (registrants), regulators, legislators and growers including the public was seen as being necessary.

In the USA, minor uses accounts for 40 to 50% of all produce sales, in California this is 79% and in Florida 98%. In recent years, 1000 minor uses have not been supported for reregistration and this is causing problems, eg with strawberry growers in Ohio where removal of "Tenoran" (which was used on 70% of the crop) has resulted in increased weed problems.

The problem is so real that many growers are considering moving off-shore to grow certain crops. Higher prices for produce is another result of this situation.

There have been problems with lack of co-operation between EPA and USDA as well as legislators not understanding agriculture and the need to control weeds in crops. Someone suggested that there was "constipation in the system" as there has been little progress in the USA in this area for 8-10 years. The

USDA has several programs (IR-4, NAPIAP), information systems and networks under way to help generate data. However funding is a limiting factor in obtaining data to meet all the minor uses which have to be reregistered.

To overcome the problems of registration it was suggested that
i) data relief was needed, with use of international data being allowed
ii) incentives were needed for registrants to generate data to register herbicides
iii) the liability issue needs to be addressed.

Symposium on "Herbicide Regulation - Shaping the Future for Weed Control"
This symposium did not really come to grips with the subject. 85% of pesticides used in USA are now herbicides. One of the main speakers failed to arrive and the others were not particularly invigorating. However it is obvious that regulation by legislators will have a marked effect on weed control practices in future.

Symposium on "Herbicides in run-off and surface waters"
Herbicides especially triazines are readily detected in run-off following rainfall events. This is most evident in spring run-off following applications of herbicides. Streams are affected for a short time, reservoirs for a long time because of long turnover of water. Concentrations of 3 to 10 μg/L for several herbicides are routinely detected in the Mississippi River for short periods of time and levels of 50 to 100 μg/L are found in smaller tributaries in midwestern USA where herbicides are used extensively. Some lakes and reservoirs are highly contaminated.

The Safe Water Drinking Act now restricts the levels of certain herbicides in water. Levels of atrazine and alachlor must not exceed 3 and 2 μg/L (3 or 2 ppb) respectively in drinking water, this is called an MCL (maximum contaminant level). It is expected that other chemicals such as cyanazine, metolachlor and simazine will be added in future. A large number of samples (336 out of 1335) have been found to exceed the MCL and thus further legislation is expected to control water contamination levels.

Best management practices for minimising herbicide run-off are :
i) choose herbicides strongly adsorbed onto the soil and not highly soluble
ii) control soil erosion
iii) reduce run-off volume
iv) conservation tillage has potential to reduce both soil erosion and run-off volume
v) timing of applications in relation to expected storms
vi) use of buffer or filter strips to reduce transport of herbicides lost from fields to surface water resources.

Some States such as Michigan now have restrictions on the use of atrazine, eg no more than 2 lbs/ac can be used annually and atrazine cannot be used within 66 feet of the point of water run-off into permanent drains and streams or 200 feet of a lake or reservoir. Atrazine cannot be used around buildings anymore.

Poster Session
Approximately 110 posters were on display. A few that interested me were:

"Superheated Steam for Railway Weed Control" Exposure to superheated steam for 1 to 6 seconds killed most seeds, seedlings and plants except roots of perennials.

"Weeds in a Changing Climate" Global warming and other climatic changes will effect growth, phenology, and geographical distribution of weeds. Increased CO_2 levels will stimulate photosynthesis and growth in weeds, but it is difficult to predict whether weed-crop competitive interactions will be detrimental or beneficial to crops.

"Post-emergence Control of Dodder" An experimental herbicide MON-13211 has shown promise for selective control of dodder in cranberry and alfalfa.

Other Sessions:
A lot of interest was shown in the "Detectspray System" being developed by the group at Armidale-Tamworth (known in Australia as WASP). Some other systems are being developed in North America, one called "SprayVision" appeared to be on a similar track to WASP, there could be some patent problems here.

Also of interest was the paper about the potential use of CO_2 lasers for weed control. This machine would act similar to a ropewick applicator where the weeds have to be above the level of the crop. Xylem and phloem translocation to wild oat and volunteer rye heads was blocked with a laser beam of 262 joules of energy per cm^2 of tissue. The cost of power for the laser treatment for an acre of lightly infested wild oats was less than 5 cents, however energy from laser beams is hazardous and proper shielding and beam extinction equipment is needed.

Penner from Michigan State reported on new adjuvants derived from soybean for enhanced herbicide efficacy in absorption. Compared to X-77 at 0.5%, which gave approximately 60% kill, several soybean derivatives at 1% concentration gave over 90% kill of weeds when mixed with nicosulfuron and sprayed on seedling Johnson grass and giant foxtail. Considerable savings in costs are available with these additives.

In the regulatory section considerable interest was shown in the paper by W. Wright, Australia and the scoring system used to assess plants (weeds) for exclusion from Australia. The paper was delivered by a person from USDA-APHIS and I answered questions. The same situation applied to the paper by M. Campbell on serrated tussock since the introduction of contaminates seed from Argentina and its sowing in 16 States. To date no serrated tussock has been detected in paddocks known to have been sown with contaminated seed.

Also of interest was the fact that USDA-APHIS is well on the way to eradicating Witchweed (*Striga* spp.) from North and South Carolina. So far 387,769 acres (89%) has been freed of the weed and 58,000 acres remain to be eradicated. A bounty scheme is now in operation where $25 is offered per location of the weed by the public. A new weed causing concern is Japanese dodder (*Cuscuta japonica*) which has been detected in kudzu seed. An area of 1 ha is infested at Clemson University. Triploid carp have been used in California to eradicate Hydrilla from the Imperial Irrigation District channel system.

Note that noxious weeds are a Federal responsibility in the USA and thus considerable funding is available for eradication programs (witchweed, serrated tussock, goatsrue, Japanese dodder, etc.).

Considerable emphasis is now being placed on integrated weed management systems both for crops and other lands. A good video entitled "Enhancing Resources through Integrated Management Systems" was seen. The objective of this video is to introduce landowners, land managers, and public interest groups to the Integrated Management System. It mainly deals with managing undesirable species (noxious weeds) through use of IMS.

It was also noted that Weed Scientists are now able to certify their credentials as professionals through the American Registry of Certified Professionals in Agronomy, Crops and Soils (ARCPACS). This was being promoted as a professional way of demonstrating medicine, law, engineering and accounting degree professionals whether they work in private or public sector have their credentials certified, subscribe to a code of ethics, and participate in continuing education. So why not weed scientists? Is this something the Weed Society should follow up in Australia?

Another point of interest is that in several States a Pesticide Application Licence is now required before a grower or applicator can use or buy certain chemicals (Restricted Use

Pesticides). The licence is initially obtained by studying a manual and sitting for an exam, but once obtained it can be maintained by attending special 1 day updating courses for growers. For instance, changes in herbicide registrations for 1993, talk on herbicide resistance and the new laws relating to atrazine use. This 1 day meeting was equivalent to 4 credits towards the 12 needed annually to maintain their licence. Twenty herbicides are classified as Restricted Use Pesticides in Michigan.

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FEATURES

Woody Weeds - Their Costs and Control

(Reprinted from Soil Economics)

"Woody Weeds" or inedible, prolific shrubs, were first recognised as a problem in parts of the Western Division of NSW in the 1880s and are now regarded as the greatest single menace threatening the pastoral lands of Western NSW with almost 70 percent of this country affected.

The costs of controlling woody weeds are high but the cost of not engaging in control works are exorbitant, because the land becomes unproductive, degraded and very difficult to bring back to its previous "open" state.

Woody weeds commonly occur in dense stands, which severely restricts pasture growth, resulting in little pasture or bare ground and subsequent erosion. Management problems caused by woody weeds include difficult musters, greatly reduced grazing capacity, increased flystrike losses, lower lambing rates and lower land values.

Disease and predators are not considered to be viable control measures as the shrubs are natives.

Recommended methods of control are:

1. Prescribed burning (costing $1.80/ha) is very effective against young and scattered shrubs, but is ineffective against some adult shrubs and in very dense areas which have choked out the grass required to conduct the fire.
2. mechanical control, such as blade ploughing (costing $54 - $62/ha) and chaining ($15 - $20/ha) are effective on all species and useful for densely infested high value areas. It is expensive, and there can be regrowth and seedling germination problems.
3. Chemical treatment (costing $0.04 a shrub), this is effective against scattered shrubs but costs prohibit dense area control.
4. Cropping - effective only in areas of reliable rainfall or under water-spreading.

The Role of Industry in the Future of Weed Science

(By Jost Harr, Vice President Research Basel, Sandoz Argo Ltd, summary of an article in Weed Technology 6:177-181)

The agricultural-chemical industry has been offering solutions in plant protection for several decades. The primary role of Industry in weed control has mainly been to provide chemicals with increasingly attractive profiles regarding safe handling, ecological acceptance, and economical attractiveness. These objectives have been reached by significant developments, eg in rates, persistence, and specificity for non-target organisms. It is therefore safe to assume that in the year 2015 and beyond chemicals will continue to maintain a major role in weed control. However, as cropping systems and criteria for desirable control levels change, industry will have to change from a re-active to a pro-active participant in the development of integrated systems. Chemical solutions will be complemented by biological and agronomical methods and will be further supported by biotechnological successes in the crop area. In addition, it is anticipated that sophisticated computer models now in

development will help exploit the potential of products as well as of integrated systems. Chemical solutions will be complemented by biological and agronomical methods and will be further supported by biotechnological successes in the crop area. In addition, it is anticipated that sophisticated computer models now in development will help exploit the potential of products as well as of integrated systems.

Thus, fully integrated companies active in chemical, biological, and molecular-biological research and having branches in the agro-chemical as well as in the seed business will be especially suited to be driving forces in the changing world of modern weed control. The practice will ask for services much more than for single products. Industry will not only have to offer those services but at the same time assist in the education of growers to enable efficient use of the increasingly intricate methods of future weed control.

Biological Control of Paterson's Curse

The first of a planned suite of biocontrol agents for Paterson's curse *(Echium plantagineum),* the Echium leaf miner *(Dialectica scalariella)*, was released in 1988. The spread of the Echium miner since its release has been spectacular, and it now established through Paterson's curse areas of NSW. Much of the initial spread was due to insects being distributed by NSW Agriculture. However, as predicted by CSIRO entomologists before it was released, damage due to this insect has been variable, but not sufficient to control Paterson's curse.

Unfortunately, the activity of the insect depends on warm temperatures. Its greatest activity usually occurs from late spring, after most Paterson's curse has finished flowering, until autumn the following year. The moth larvae damage the few plants present over summer and the early rosette stage of Paterson's curse, but not the large plant numbers present over winter and spring.

NSW Agriculture has been very involved in the release and monitoring of the leaf miner. Mass rearing has been undertaken at Mudgee, Yanco, Tamworth and Orange. Research into the impact on Paterson's curse is being conducted by NSW Agriculture at Mudgee and Tamworth by CSIRO in the south of the state and by Keith Turnbull Research Institute (KTRI) in Victoria.

Larvae of the Echium leaf miner are having a greater impact on the closely related weed species, viper's bugloss *(Echium vulgare).* This is because viper's bugloss is more prevalent during summer and consequently the leaf miner is more adapted to its life cycle than that of Paterson's curse.

Three more insects are currently being prepared for release in Australia. The root weevil, *Ceutorhynchus larvatus,* has been released in the south of the state by CSIRO and releases by NSW Agriculture are due to occur during autumn 1993. NSW Agriculture is breeding up stocks at Yanco and Tamworth for release. The weevil is unlikely to spread rapidly because it usually produces only one generation per season.

Populations of a third agent, another root weevil, *Ceutorphynchus geographicus,* are currently being increased for later release. It is anticipated that these two weevils will have a greater impact on the weed than Echium leaf miner, but they will probably spread slowly.

Finally, a flea beetle, *Longitarsus aeneus,* is the next agent scheduled for release. However, difficulties have been experienced rearing this species in quarantine. Permission has been obtained to direct release this insect in the field following a half year in quarantine. Insects will be brought to Australia during the European autumn and held at low temperatures until release in the Australia autumn. Additional insects will be tested by CSIRO and KTRI for their host specificity.

Kochia scoparia (*Syn. Bassia scoparia*) - New Weed for Australia

by Bob Trounce, Weeds Agronomist, NSW Agriculture, Orange

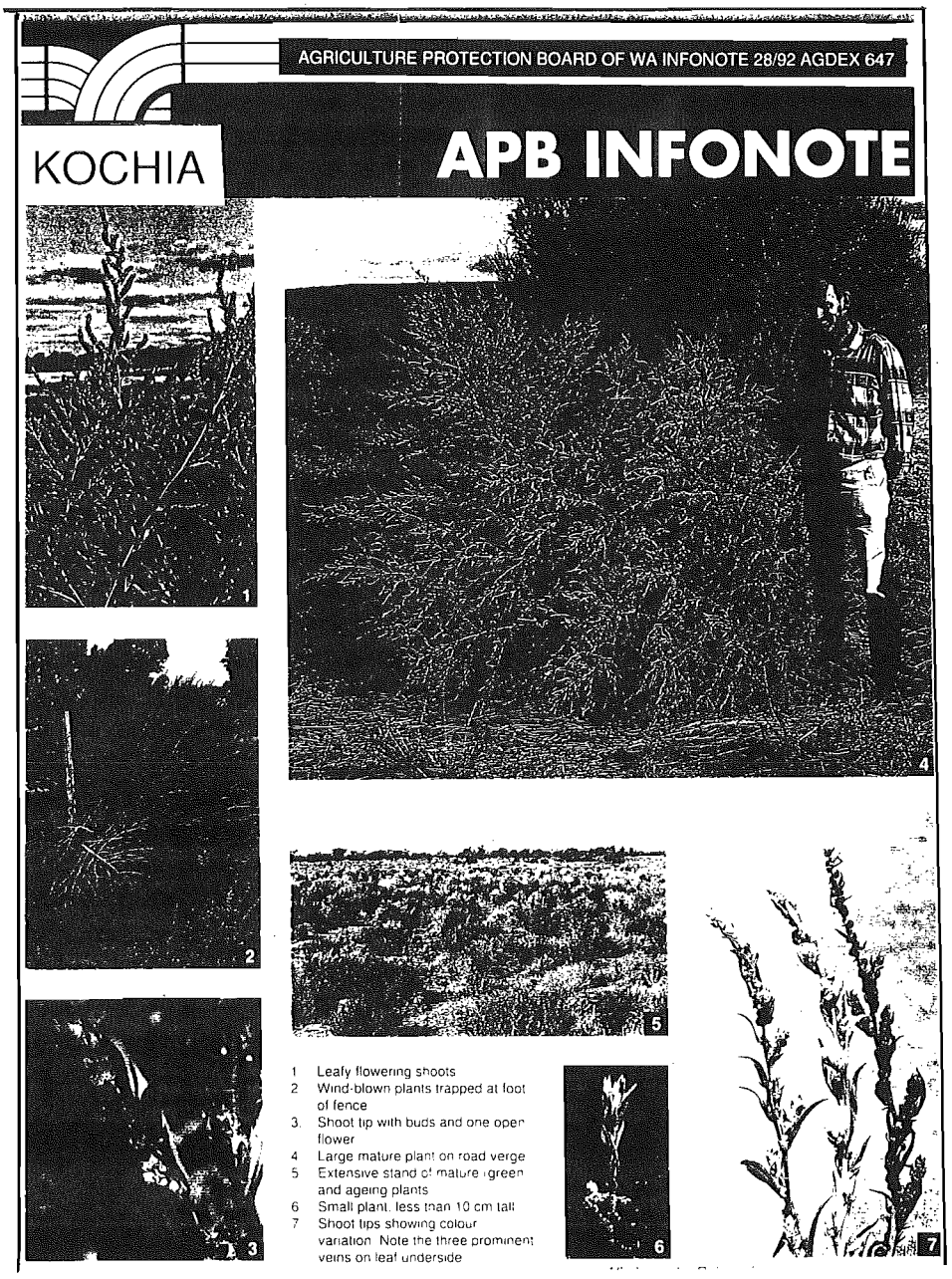
Also known as burning bush, summer cypress or mock cypress, kochia is a summer growing annual which is native to eastern Europe and western Asia. It has become naturalised throughout Europe and parts of temperate Asia and is recorded in Argentina, Canada and USA.

Seed of *Kochia scoparia* was introduced into Western Australia in 1990 by Kimberley Seeds and promoted as an annual forage species suitable for salt affected land. The plant grows quickly to 1-2 metres tall and resists insect attack making it attractive for rehabilitation of problem soils.

The seed was initially planted on about 60 farms over an area of 750 hectares and samples of seed were also supplied to recipients in Victoria and New South Wales. The fate of the NSW shipment is currently being traced, however Victorian recipients at Warrnambool and Ballarat reported that all seed was non viable when planted.

Potential Threat to Agriculture

Kochia is a serious weed in North America being introduced during the last century as an ornamental plant. Over the last 50 years it has spread extensively and shown both toxic and allellopathic effects. Shoots of the plant have been found to be toxic to grazing animals due to high levels of oxalate, nitrate, and alkaloid. Reports in the USA indicate tha plant can affect sheep and cattle causing depression, dehydration, weight loss,



muscular weakness, photo sensitisation, runny eyes and crusty muzzle.

Tests have shown that extracts from the plant cause a reduction in the germination and growth of sorghum, chickpea, lettuce, cotton and kochia itself. The plant is also a significant competitor with crops, with measurements in the USA indicate the plant can affect sheep and cattle causing depression, dehydration, weight loss, muscular weakness, photosensitisation, runny eyes and a crusty muzzle.

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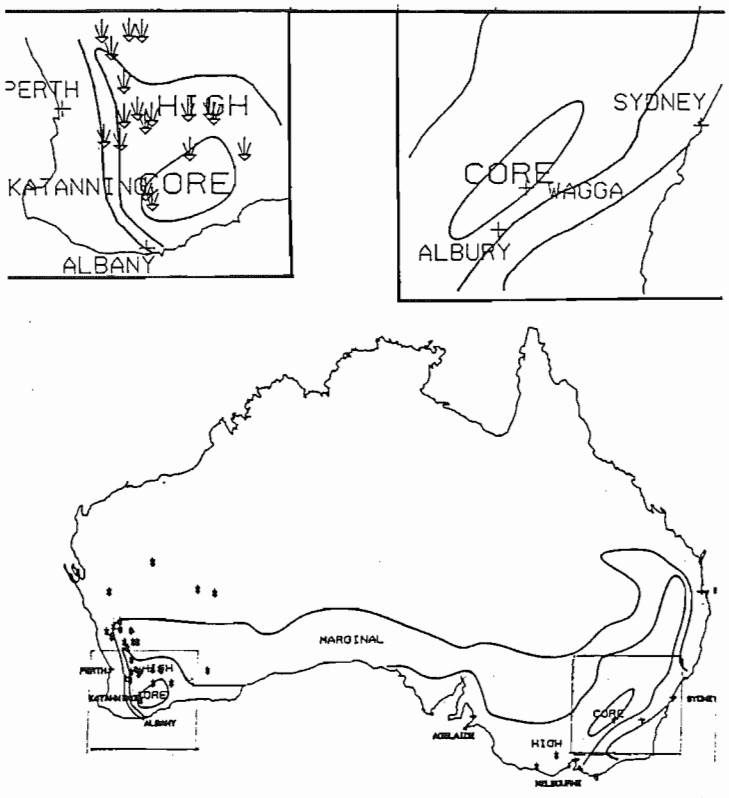

BIOCLIM PREDICTION FOR BASSIA SCOPARIA

⇓ RELEASE SITES

—— PREDICTION CONTOURS

\+ TOWNS

WA Situation

In Western Australia the plants ability to spread quickly has been realised, the original 750 hectares planted having naturally spread to an estimated 6,000 hectares after only one seeding. The tumble weed habit has clearly distributed seed which has subsequently germinated along tracks where plants have blown, establishing new colonies up to 2 km from the original planting.

Bioclim predictions made in Western Australia show that the weed could spread to most of the major cereal growing regions in Australia. If the weed spreads over the predicted areas, it will have a major economic impact through reduction of crop and pasture yields, contamination of grain, fence damage and control costs on private and public lands. Conservatively the cost of these effects in the wheat/sheep zone of Western Australia have been estimated as $7.2 million annually. On these figures the cost to Australia could be about $30-40 million annually.

Many states in Australia (including WA and NSW) have now listed kochia as a state declared noxious plant.

NSW Agriculture requested, through Standing Committee, that authorities in each state be made aware of the threat of this introduced plant to agriculture and recommended a nationwide program to eradicate plants in areas where they are currently growing.

In January 1993, a consultative Committee on kochia, whose members were drawn from State and Commonwealth authorities, met in Perth to formulate a plan of eradication. This committee estimates that $200,000 will be needed in 1992/93 to commence the eradication campaign and further funding will be needed in subsequent years.
(Information sources were APB Infonote "Kochia" (Agriculture Protection Board WA and AQIS draft paper to SCARM "Potential Weed Threat of Kochia to Australia").

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IN BRIEF

Spread of Silverleaf Nightshade

The area of silverleaf nightshade *(Solanum elaegnifolium)* in New South Wales was surveyed by Jim Dellow (Weeds Agronomist, NSW Agriculture) with the help of District Agronomists and Noxious Plants Advisory Officers in September 1992. Jim estimated that there is an area of 140,000 ha of silverleaf nightshade, mainly in the wheat belt, and this is a marked increase on the 12,000 ha estimated in 1977. The infestations comprise 16,000 ha dense stands exceeding 100 ha, 58,000 ha scattered colonies, and 66,000 ha of widely scattered plants. The wet summer this year has probably caused a further increase in the area of silverleaf nightshade.

Release of Biological Control Agent for Scotch Broom

The European twig mining moth *(Leucoptera spartifoliella)*, a biocontol agent for control of Scotch broom *(Cystisus scoparius)* was officially released by the Director-General of NSW Agriculture on 3 February 1993. The release was made at the Barrington Tops near Scone, where Scotch broom infests over 10,000 ha of bushland and nearby pastures. Another release was made near Braidwood on the Southern Tablelands on 6 February.

The release marks the culmination of a research program started by Dr John Hosking in 1989 to identify, introduce, and test biocontrol agents for Scotch broom. As a result of this program the twig mining moth was imported from New Zealand in 1990, and has been evaluated by Peter Hodge who is located at the CSIRO facility in Canberra. This research and additional CSIRO investigation in Europe, have been supported by grants from the NSW National Parks and Wildlife Service, the Forestry commission of NSW and the Hunter Pastoral Company.

The twig mining moth is the first in what is hoped to be a series of introductions for Scotch broom. Peter Hodge is already evaluating the next insect, a sap-sucking psyllid.

Weeds of Conservation Areas

A Working Group on Weeds of Conservation Areas, an informal international group, was formed at the First International Weed Control Congress in Melbourne in February, 1992.

The group exists to meet its members needs for contact with each other and for interchange of ideas, information and data. This is achieved largely through direct personal contact between members, but also through an occasional newsletter and the circulation of interesting material between members. The group will also hold meetings either on its own or in association with other groups, including the Second International Weed Control Congress in Copenhagen in 1996. By October, 1992, the group had grown to 43 members.

Anyone interested in joining the Working Group on Weeds of Conservation Areas should write to Dr J T Swarbrick, Univ, of Queensland Gatton College, Gatton, Queensland 4343, Australia. The annual subscription is $10.00. Please list your name, title, address, fax number, and interests for circulation to other members, and mention any material you are willing to supply for circulation with the newsletter.

Chilean Needle Grass

Chilean needle grass *(Stipa neesiana)*, a perennial grass, is perceived as a growing problem in northern NSW in the Glen Innes district, as well as Guyra and Ben Lomond. It is possible that Chilean needle grass has the potential to become the serrated tussock of the north, but as yet, it is in it's infancy. One of the difficulties is to bring the plant to the attention of producers who may have it on their property, but are unaware of its presence. Once identified the plant has

proved to be difficult to control and is capable of slow, but steady spread. It is generally unpalatable to livestock, thrives on high fertility soils and competes well with introduced perennial grasses. A meeting was held in early March to discuss the problem. Contact Mick Duncan (district agronomist with NSW Agriculture at Armidale) for more detail on 067 737252.

Bathurst Burr and Dodder in Southern NSW

The larvae of the web moth (*Loxostege assinitalis*) controlled large areas of Bathurst burr in the Hay district this season. The better control was mainly on the black soils.

Outbreaks of dodder (*Cuscuta* spp.) have occurred in the Lachlan, Murrumbidgee, Murray and Tooma River Valleys. Dodder was found growing on smart weed (*Polygonium* spp.) in most situations, and on a wide range of other weeds once away from the flood out areas.

NSW Agriculture is conducting a major awareness campaign throughout NSW during this summer and autumn on golden dodder (*Cuscuta campestris*), an important parasitic weed of several crops, especially lucerne and clover. A Dodder Working Group comprising Hugh Milvain, Bob Trounce, Lester McCormick, Neil Nelson and Peter Gorham met in Orange in January to coordinate the campaign. Peter Gorham carried out an aerial survey of parts of the Lachlan Valley in January to determine the extent and location of infestations in that area.

Poisonous Plants

Wet summers such as this cause prolific growth of weeds some of which may be harmful to stock, particularly when other grazing tends to be eaten out in late summer. Heliotrope contains alkaloids which may be cause problems with cattle, sheep and horses. Affected animals lose condition, show restlessness, aimless and possibly belligerent behaviour and nervous signs. The changes are irreversible. Lesser loosestrife (*Lythrum hyssopifolia*) has also been a problem this season causing kidney and liver disorders, and death of several hundred sheep. Contact Rob Walker (Senior Veterinary Officer, Wagga Wagga) on 060 213429.

What Weeds are Developing Resistance to Herbicides in 1993?

In addition to ryegrass (*Lolium rigidum*), herbicide resistance in Australia is entering a second phase in which other weed species are now developing resistance. Major new cases include wild oats (*Avena fatua* and *A. sterilis*) resistant to the "fop" herbicides (including Hoegrass, Fusilade, Verdict, Assure, Targa and Puma) in NSW, Vic, SA and WA. It is estimated that at least 100 farmers have problems with resistant wild oats and the numbers are expected to grow.

Resistance is also developing in broadleaf weeds, which is not surprising given the widespread use of the ALS herbicides (eg Glean, Ally, Logran, Pursuit, Broadstrike and others).

Arctotheca calendula (capeweed), *Hordeum glaucum* and *H. leporinum* (barley grass), *Vulpia bromoides* (silver grass) are resistant to paraquat and diquat; and *Sonchus oleraceae* (milk thistle), *Sisymbrium orientale* (mustard) are resistant to all ALS inhibitors.

Leon Smith New IWSS President

Dr Leon Smith succeeded Dr Larry Foy as President of the International Weed Science Society in February 1993. Leon was Principal Agronomist (Weeds) of NSW Agriculture from 1981 until 1992 and now he is a consultant. He was recently involved in the preparation of the National Weeds Strategy.

7th Biennial Noxious Weeds Conference

The conference will be held at Foster this

year from 19-23 April. The Weed Society is sponsoring a prize for the best poster or display. The results will be published in the next newsletter.

Weed Control in Winter Crop Booklet 1993 - Update

NSW Agriculture's popular booklet "Weed Control in Winter Crops' (Mullen & Dellow) will go to print shortly. There are several new herbicide inclusions as well as extensions to current labels. Below are the main additions:

Pacer®, 850 g/kg glyphosate water soluble granule, with similar weed spectrum to Roundup CT®, rates 0.21 - 0.85 kg/ha, cost $26/kg.

Sandoban®, 60 g/L dicamba plus 150 g/L glyphosate, for fallow seedbed preparation, rates 1.2 - 2.4 L/ha, cost $10/L.

Puma®*S*, 69 g/L fenoxaprop-p-ethyl, for wild oat and phalaris on wheat, cost $63/L.

Jaguar®, 259 g/L bromoxynil plus 25 g/L diflufenican, for broad spectrum broadleaf weed control in wheat and barley, cost $21/L.

Select®, 240 g/L clethodim, for grass control in chickpea, fababean, field pea and lupin, cost $120/L.

Pursuit®, 240 g/L imazethapyr, for post-sowing pre-emergence broadleaf and grass weed control in field peas and fababeans, cost $170/L.

Targa® replaces Assure®.

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CALL FOR TRAVEL GRANT APPLICATIONS

Applications for funds are invited for the Weed Society Study Travel Grant. A number of grants are available this year. The purpose of the grant is to assist members of the Society or others to attend conferences, seminars or study tours associated with weeds. Special consideration will be give to people wishing to attend the 10th Australian/14th Asian-Pacific Weeds Conference in Brisbane this September. Applications should be forwarded to the Secretary before **30 April 1993.**

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MEMBERSHIP RENEWAL

Members are reminded that if you have not already done so, please forward you annual membership fee ($12 individual or $24 corporate) to the Secretary, Weed Society of NSW, PO BOX 438, Wahroonga 2076.

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BOOKS and VIDEOS

Herbicide Resistance in Weeds and Crops - J. C Caseley, G.W. Cussans and R.K. Atkin, editors. 1991. Butterworth-Heinemann Ltd., Oxford, 513 p. illus., Hardcover, ISBN: 0-7506-1101-4, US$95.00. This is a compilation of papers and poster abstracts presented at the Eleventh Long Ashton International Symposium held in September, 1989, at the University of Bristol, England. The symposium was held to review the increasing incidence of herbicide-resistant crops. The all inclusive title of this test is well borne out by its contents, which provide the reader with current, detailed information on all aspects of herbicide resistance. The papers are organized in a meaningful progression that parallels our understanding of herbicide resistance, from its earliest discovery to mechanisms to the development of resistant crops.

The Organic Handbook 5. Weeds: How to Control and Love Them, J. Readman. Turnbridge Wells, UK; Search Press Ltd (1991) 64 pp. ISBN 0-85532-694-8
[En, Price £5.95]

This book provides a useful contribution towards an increased understanding of garden weeds. At the same time it encourages gardeners to adopt an organic approach to weed management. The author emphasizes the opportunism of weeds, their tenacity,

colonizing ability and powers of survival as a background to a clear and concise overview of the ecological characteristics of weeds with particular reference to life cycles, seed production and vegetative propagation. Description are given of some 90 important and more rare annuals and perennials, their Latin and common names, their biology, identification, origin, their significance as garden weeds, impact on the environment and their uses for medicinal, culinary and other purposes. Also considered are the benefits that some weeds can give whilst growing and when harvested as well as their value as soil indicator plants. The problems that weeds can cause are then examined and methods for weed suppression without resort to herbicides are described. They include composting, presowing cultivation, sowing and planting techniques, mulching and green manuring, crop rotation, raised bed techniques and general plant hygiene suggestions for ensuring gardens stay as weed free as possible. The removal of weeds by hoeing, hand weeding, flaming and biological control is mentioned briefly. Sections on weed control in lawns and on woody weeds are included. Appropriate methods of control for various garden situations are tabulated and there is a glossary of terms and an index. The book is well illustrated and there are colour photographs of many of the weed species described.

Biological Control of Weeds; A World Catalogue of Agents and their Target Weeds, M.H. Jullien (Editor), Wallingford, Oxon, UK; CAB International (1992) Ed. 3, vii + 186pp. ISBN 0-85198 - 776-4 [En, 731 ref., Price £18.50]. CSIRO, Division of Entomology, Long Pocket Laboratories,Private Bag No 3, Indooroopilly, Brisbane Qld 4068, Australia

This is the 3rd edition of a reference catalogue which outlines the current status of biological control releases and is comprised of 4 comprehensive lists which summarizes information on and gives literature references to: exotic vertebrates released and their target weeds; native organisms utilized and their target weeds; previously used or potential agents found in exotic ranges where their deliberate release has not been recorded. Target weeds are listed alphabetically under family names and agents are listed alphabetically after their target weed. Indexes of scientific and common names of weeds and scientific names of control agents are given. This edition documents developments in biological control up to the end of 1990.

Fate of Pesticides in the Environment is a presentation of the various processes that influence pesticides during and after application. The two tape program describes the different types of pesticides (herbicides, insecticides, fungicides, etc), distribution of use, amounts used, and how they may be applied. Transfer and degradation processes that influence pesticide behaviour are defined and the factors affecting each are described. A discussion of models used to predict pesticide movement rounds out the program. The programs are presented in a manner that make them a useful tool for pest management, crop management, environmental science, or pesticide science courses. The tapes are also useful for extension programs in agent training or pesticide applicator certification. Companies would find them useful in the training of new sales personnel or update training for other employees. Each tape is approximately 25 minutes long and an instructor's manual is provided that contains the exact text of the two programs, plus additional details to assist the teacher in answering questions or leading a discussion. The two tape set is available from MARATHON-Agricultural and Environmental Consulting Inc., PO Box 6969, Las Cruces, NM, 88006, USA. Price is US $175 and includes shipping.

Farmer to farmer: Strategies for Sustainable Agriculture, a six part video series is a comprehensive overview of the methods many farmers have developed to reduce or eliminate the use of insecticides, herbicides, and synthetic fertilizers. The series was made with the help of nearly 200

farmers and other experts and was shot in a twelve state area in the northeastern and mid-Atlantic regions of the US. The six half hour programs are titles: Field Crops; Rotational Grazing; Vegetables; IPM for Vegetables and Small Fruits; IPM for Apples; and High-Value Marketing. Available from Farm Videos, C/O Rooy Media, 7407 Hilltop Drive, Frederick, MD, 21702, USA. Price is US $29.95 each or the complete set of 6 for US $149.95.

DIARY OF CONFERENCES

7-8 June, 1993

International Symposium on Quantitative Approaches in Weed and Herbicide Research and Their Practical Application, Braunschweig, Germany, Contact: EWRS-Symposium 1993, C/O Dr. Th. Eggers, Inst. f. Unkrautforschung, Biolog. Brundesanstalt, Messeweg 11/12, W-3300 Braunschweig, Germany. Ph: 49531399433: Fax: 49531399239

5-9 July 1993

4th Conference of the International Federation of Organic Agriculture Movements. Dijon, France. Contact: V Lecomte, BP 48, 21802 Quetigny, France. Fax 80 709148.

23 August-3 September 1993

15th International Botanical Congress. Tokyo, Japan. Contact: Kunio Iwatsuki, Department of Botany, Faculty of Science, University of Tokyo,7-3-1 Hongo, Bunkyo-ku, Tokyo 113, Japan.

6-10th September, 1993

Combined XIV APWSS and 10th Australian Weeds Conference, Brisbane.
Contact: John Swarbrick. Ph: 074 620281 Fax: 074 623081

22-25, November, 1993

Brighton Crop Protection Conference:Weeds. Brighton, UK. Contact: Conference Assoc & Services, 55 New Cavendish St, London WIM 7RE, UK. Fax. 071 935 7559.

9-10, December, 1993

Herbicide Resistance Workshop. Edmonton Canada. Contact: John Donavon phone (403)632-8208.

4-9 July, 1994

8th International Congress of Pesticide Chemistry. Washington DC, USA. Contact: Office of the Secretariat, American Chemical Society, 1155 16th St NW, Room 205, Washington, DC 20036, USA.

21-27 August, 1994

24th International Horticultural Congress. Kyoto, Japan. Contact: Japanese Society for Horticultural Science, Faculty of Agriculture, Kyoto University, Sakyoku, Kyoto 606, Japan.

2-7, July, 1995

XIIIth International Congress on Plant Protection. The Hague, Netherlands. Contact: Dr J C Zadoks, Wageningen Agricultural University, POB 8025, 6700, Wageningen, Netherlands.

THE WEED SOCIETY
OF NEW SOUTH WALES

A Society
Promoting the Awareness
and Understanding of
Weeds and Their Control

MEMBERSHIP QUESTIONNAIRE

Some functions arranged by your society have not been well supported, while others have. This questionnaire is seeking your help to organise future events which meet your needs. Any additional information you would care to add to the questionnaire would be of great assistance to the committee.

Have you been to any Society functions? Yes/No

If yes, how many?

If you haven't been to any Society functions, why not?

What was the best Society function you have attended?

Can you tell us what it was about the function that made it successful?

What was the worst Society function you went to?

What factors about this particular function contributed to its lack of success?

What influences you in deciding whether or not you will attend an activity? Score between 1 (least) - 5 (most).

Cost:	distance from home:	technical content:
speakers:	field inspection:	social mixing:

others (please list and score):

Are you happy with the newsletter? Yes/No

How can we improve the newsletter?

Please return this questionnaire to: Weed Society of NSW, PO Box 438, WAHROONGA 2076

THE WEED SOCIETY OF NSW NEWSLETTER

If undelivered please return to:
PO Box 438
WAHROONGA 2076

ACT NOW

THE 10TH AUSTRALIAN AND 14TH ASIAN-PACIFIC WEEDS CONFERENCE
WILL BE HELD IN THE SHERATON HOTEL IN BRISBANE
FROM SEPTEMBER 6-10 1993

ACT NOW

IF YOU ARE COMING AND HAVE NOT YET REGISTERED

IF YOU HAVE A REGISTRATION BOOK FILL IN THE REGISTRATION FORM
AND POST IT TO ORGANISERS AUSTRALIA*; PAYMENT SHOULD
ACCOMPANY THE FORM OR YOU CAN SEND PAYMENT LATER

REGISTRATIONS (AND PAYMENTS) AFTER APRIL 1ST ATTRACT A LATE
FEE. DAY AND STUDENT REGISTRATIONS ARE AVAILABLE

IF YOU DO NOT YET HAVE A REGISTRATION BOOK GET ONE FROM
ORGANISERS AUSTRALIA*

ACT NOW

IF YOU HAVE A POSTER, COMPUTER PROGRAM, VIDEO OR PAPER

THAT YOU WANT TO PRESENT

WE STILL HAVE ROOM FOR SOME (NOT MANY) POSTERS, FOR
COMPUTER PROGRAMS AND FOR VIDEOS

THE PAPER PROGRAM IS FULL EXCEPT FOR THE SYMPOSIUM ON PUBLIC
AND POLICY ISSUES (EG EXTENSION, AWARENESS, EDUCATION,
TRAINING, PUBLIC HEALTH, ENVIRONMENTAL EFFECTS OF CONTROL
PRACTICES, URBAN WEEDS, HERBICIDE SAFETY, REGISTRATION,
POLICY, NOXIOUS WEEDS, WEED INTRODUCTION, LAND DEGRADATION)

WE ALREADY HAVE THE MATERIAL

WE ARE NOW GETTING THE PEOPLE

WE HOPE TO SEE YOU TOO IN BRISBANE IN SEPTEMBER

* ORGANISERS AUSTRALIA
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