JULY 29, 197.

The Editor
Australian Journal of Ecology
c/o School of Botany
University of N.S.W.
P.O. Box 1
KENSINGTON N.S.W. 2033

Dear Sir

Recently you have published two articles by Dr J. Springett on soil fauna and its variation in relation to plantation establishment and prescribed burning. The article dealing with prescribed burning is a highly selective extract from a report submitted by Dr Springett on the investigations which she carried out for the Forests Department of Western Australia. The address given infers that the articles were published on behalf of the Forests Department, yet neither she as the author, nor yourself as the editor, had the courtesy to refer the articles to our organization either prior to, or after the publication. This is considered to be a serious omission, particularly as the articles are highly critical of our activities. Were the conclusions reached valid and supported by adequate scientific evidence, we would have little option but to accept them as justified. However, a detailed review of the original report, a copy of which will be forwarded to you should you so desire, indicates that the conclusions reached bear little relationship to the full set of data, and that the figures quoted are highly subjectively chosen. It is hoped that you will correct this by publishing the attached letter to the editor.

Yours faithfully

J. J. HAVEL
SUPERINTENDENT (RESEARCH)

JJH/me

Attach.

Inquiries:

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Dear Sir

In a recent edition of your journal you have published two articles by Dr J. Springett, which are already being given prominence in discussions about the possible adverse effects of prescribed burning on the health of forests.

I would like to raise several points relevant to the articles.

Dr Springett was employed by the Forests Department until 1972, when she commenced practice as an ecological consultant. She was employed to investigate specifically the effect of forestry activities on the fauna of the forest litter, and at the completion of her employment submitted a detailed report on her activities, to which I shall subsequently refer. In the report she commented on likely effect of burning based on three pairs of plots which were assumed to have been identical prior to commencement of prescribed burning on one plot of each pair. On the basis of her comments, as well as on the basis of ideas put forward by Shea and Hopkins at the 1973 ANZAAS congress, the department has commenced, in conjunction with CSIRO, an investigation of alternative methods of fire hazard reduction. The problems involved are considerable, and clear evidence is needed before far-reaching changes, affecting the safety of the entire forested region, can be implemented.

At first sight, Dr Springett's articles might be considered to be such evidence. However, perusal of Springett's original report indicates that the article published by you on the effect of prescribed burning is a highly selective extract which quite inadequately accounts for inherent differences between sites, and the period since burning.

I have been associated with Dr Springett on some of the fieldwork, and several of her sampling sites correspond to my ecological plots, for which detailed enumeration of site and vegetation characteristics is available. (Havel 1975) Without exception these plots were subject to periodic prescribed burning over the past two decades, yet the differences between them, in terms of both number of species and number of individuals of soil fauna, are of the same magnitude as the differences between Springett's burnt and control plots. The differences in edaphic characteristics between the burnt and unburnt plots in the jarrah forest, which are attributed by Springett to the fire regime, are much more likely to be site differences. Both plots are situated on uplands where it is difficult to see how several cycles of prescribed burning could

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materially increase the proportion of gravel, or reduce the proportion finer particles, especially as the landscape is very stable.

The enumeration of faunal difference between the various site types in the jarrah forest is given in table 1. The two jarrah plots referred to in Springett's article (16, 17) are in terms of site, structure and composition of the forest intermediate between plots 2 and 3, with the burnt plot being edaphically closer to plot 3.

Comparable site difference can also be found in the karri forest. Springett sampled three virgin karri forest sites (nos 19, 27, 29) which had comparable fire history, in that they were burnt 6 to 11 years prior to sampling. They differed, not only in the total number of animals (121, 515 and 276), but also in the occurrence of the various taxa (table 2). The comparison of a site not burnt for 40 years, with a site burnt only a year prior to sampling, describes only the initial impact of fire, but ignores the subsequent recovery. If any conclusion can be made from the data, it is that there is a relatively rapid recovery, which is near complete within 6 to 11 years after the fire, and that no taxon is lost completely.

Whilst it is not intended to suggest that the prescribed burning has had no effect on the soil fauna, the disregard of site differences, the lack of pre-burning data, and the lack of replications must throw a serious doubt on the value of Springett's conclusions as a basis for a major change in forest management

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SUPERINTENDENT OF RESEARCH
FORESTS DEPARTMENT OF WESTERN AUSTRALIA.

JJH/me

REFERENCES:

HAVEL, J.J. (1975) Site-vegetation mapping in the Northern Jarrah Forest (Darling Range). 1. Definition of site-vegetation types. Bull. For. Dep. W. Aust. 86.

TABLE 1

Numbers of animals per m^2 in jarrah forest. Results of Hand Sorting Turves.
(After Springett 1973)

Springett's Site Number	Havel's Plot number	Site-vegetation type	Description of forest type and site	Oligochaeta	Geoplana sp	Chilopoda	Aranaea	Isopoda	Insects	Gasteropoda	Diplopoda	Amphipoda	Phalangidae	Total number of animals
2	169	Q	Marri-yarri-jarrah tall open forest on fertile red loam, steep well drained valley slope, high rainfall zone	90	-	20	10	10	90	-	30	10	-	260
3	150	S	Jarrah-marri tall open forest on infertile lateritic gravel, well drained uplands, high rainfall zone	-	-	30	-	-	70	-	-	-	-	100
5	86	B	Jarrah-marri open forest on infertile humusoid sand, mild valley slope, medium rainfall	30	-	5	3	5	16	-	-	-	-	59
6	72	D	Marri-jarrah-yarri open forest on infertile sandy loam, seasonally wet, mild slope, medium rainfall zone	45	15	-	3	-	18	-	-	-	-	81
7	64	E	Jarrah-marri open forest on seasonally moist infertile loamy sand, mild slope, medium rainfall zone	10	-	-	3	-	11	-	-	-	-	24
11	106	H	Jarrah woodland on infertile, dry, yellow sand, mild valley slope, low rainfall zone	10	-	5	-	-	26	-	-	-	-	41

TABLE 2 Karr

Numbers of animals per m^2 in ~~jarrah~~ forest. Results of Hand Sorting Turves

Sample size 4 x $0.1m^2$. (After Springett 1973)

Springett's site number	State of the forest	Period since last burn (years)	Oligochaeta	Geoplana sp.	Chilopoda	Aranaea	Isopoda	Insects (larvae)	Insects (adult)	Gasteropoda	Diplopoda	Amphipoda	Phalangidae	Total number of animals
18	Regeneration Karr 4 years old	4	10	-	8	5	8	20	18	8	10	-	-	87
19	Virgin Karr	9	20	5	13	10	-	(50)		3	20	-	-	121
21	Selectively cut Karr	7	13	-	18	25	13	17	20	-	18	20	3	148
24	Regeneration Karr 40 years old	40	90	10	90	25	80	25	15	-	145	20	15	515
25	Regeneration Karr 40 years old	1	3	-	15	8	10	5	5	5	13	3	-	67
27	Virgin Karr	6 or 11	30	-	33	30	180	(60)		20	38	103	13	507
29	Virgin Karr	6 or 11	15	3	23	20	63	(28)		15	28	73	8	276