A 10 per cent solution of sodium chlorate is stronger than that usually used on this railway, therefore weaker solutions were also employed. The 2·5 per cent solutions were chosen because it was thought that such dilute solutions would not kill the specimens, or would do so very slowly, and that the effect of the catalysts would be more marked. The action was actually somewhat delayed, but all the specimens were killed in 10–18 days, and the action of the catalysts was not appreciably more marked than with the stronger solutions.

Similar results were obtained with all the catalysts. In each case the lethal effect of the chlorate was increased, as shown by the rate at which the specimens died, and the changes which took place in the leaves and stems. The vanadium pentoxide appeared to be somewhat more potent, and to make a more marked difference to the appearance of the plant; the leaves were more blackened and the stems more stained. Little, if any, difference could be observed between the effects of the other catalysts used. Although some effect was observable with 0·01 per cent of catalyst (calculated as anhydrous salt), there was more with 0·02, and still more with 0·04 per cent.

Different strains of the same species showed a marked difference in their powers of resistance. Thus, in test (2), a few stems were still but little affected when all the others were dead. The resistant specimens were all similar to each other in appearance, but differed considerably from the remaining stems. Similar results were obtained with the dog-rose and the wild bramble.

As was to be expected, the solutions of the catalysts alone had no appreciable effect upon the stems. Bates obtained the same result with vanadium pentoxide, and dilute solutions of the other compounds used are known to have a beneficial effect upon plants.

The field tests were carried out on plots each 4 sq. yd. in area, which were chosen so as to be as alike as possible, but considerable differences existed. In each case the weed-killer used was 'Atlacide'. The tests were as follows:

(1) Plots treated with
1 pint 'Atlacide' (1 part concentrate to 3 parts water); 1 pt. containing 0·015 per cent $MnSO_4.4H_2O$; 1 pt. containing 0·03 per cent $MnSO_4.4H_2O$.

(2) Plots treated with
1 pint 'Atlacide' (1 part concentrate to 5 parts water); 1 pt. containing 0·015 per cent $MnSO_4.4H_2O$; 1 pt. containing 0·03 per cent $MnSO_4.4H_2O$; 1 pt. containing 0·04 per cent $CoCl_2.6H_2O$; 1 pt. containing 0·01 per cent V_2O_5.

(3) Plots treated with
1 pint 'Atlacide' (1 part concentrate to 6 parts water; 1 pt. containing 0·03 per cent $MnCl_2.4H_2O$. Two plots were treated with each solution.

(4) Plots treated with
1 pint 'Atlacide' (1 part concentrate to 8 parts water); 1 pt. containing 0·06 per cent $MnCl_2.4H_2O$. Two plots were treated with each solution.

Although the differences between the different plots made close comparison difficult, by comparing the effects on particular species, for example, bind-weed (*Convolvulus arvensis*), reliable comparisons could be made. It was evident, especially where weak solutions of 'Atlacide' were used, that the manganese salts were effective in promoting the lethal action of the herbicide. The effects of the other catalysts were not so definite, but this was probably because insufficient tests were carried out with these compounds.

The laboratory and small field tests both show that the salts of manganese, cobalt and nickel, as well as vanadium pentoxide, have an intensifying effect upon the action of sodium chlorate as a weed-killer. It is proposed to carry out larger tests on the track next season, in order to ascertain if the catalytic effect is sufficiently pronounced to justify the use of these materials in practice.

I desire to thank the Chief Engineer, Southern Railway, Mr. G. Ellson, for permission to publish this paper, and Messrs. the Atlas Preservative Company for supplying the sodium chlorate and 'Atlacide'.

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[1] Bates, NATURE, 148, 753 (1941).

Index of X-Ray Diffraction Data

IN response to the demand expressed at the Conference on X-Ray Analysis in Industry held at Cambridge last spring[1], the Institute of Physics has undertaken to supplement the index of X-ray powder patterns published by the American Society for Testing Materials[2]. The purpose of the index is to identify rapidly any substance that will give an X-ray powder photograph[3]. The work is being carried out in co-operation with the interested American bodies—the American Society for X-Ray and Electron Diffraction and the American Society for Testing Materials.

A considerable number of laboratories in Great Britain have furnished lists of substances for which they are able to supply data, and the 'editing' is being done at the Cavendish Laboratory. The purpose of this letter is to ask all people who have powder photographs of substances that might be suitable for inclusion in the supplement to communicate with Dr. A. J. C. Wilson, Cavendish Laboratory, Cambridge. A list of the substances already offered may be obtained from him on request.

The X-ray index has already proved to be of considerable industrial importance, and an extensive supplement will greatly increase its usefulness. It is hoped, therefore, that there will be a wide response to this appeal.

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(President, Institute of Physics).

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[1] NATURE, 149, 503 (1942); *J. Sci. Instr.*, 19, 32, 80 (1942).
[2] NATURE, 149, 437 (1942).
[3] *Indust. and Eng. Chem.* (Anal. Edit.), 10, 457 (1938).

Errors in Mathematical Tables

I AM now trying to consolidate for publication, partly in a new American National Research Council quarterly, and partly in a book entitled "A Computer's Guide to Mathematical Tables", the work that I have done during the past twenty years on compiling lists of errors in mathematical tables. I should be glad to be told of any known errors in tables, or to have references to published lists. News of unpublished tables would also be appreciated.

L. J. COMRIE.

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