lacks the necessary degree of external support. Consequently, the only course of action open to the D.H.S.S. is to withdraw the report and to inform interested bodies accordingly. - I am, etc.,

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SIR,-Dr. I. K. Scott (8 September, p. 541) praises the report of the D.H.S.S. on promotion of research in deafness. It is, in many ways, a very informative report, specially to those who are not familiar with the various problems of research in the subject. But similar general descriptions can already be found in numerous publications, symposia, or reports of working parties. The solution of major problems of sensorineural hearing loss is concerned stagnation has set in during the past few years. An important stage in research has been almost completed. Variables were simplified, and light, individual research workers, or small groups in isolated research units. No further progress can be made until the various fragments of information could be brought together from a very large field of knowledge and studied how they influence each other and how they are linked. A new way of thinking and a new approach is called for. I suggested a few years ago that a new type of research centre should be created with suitable facilities where research workers from a wide field could work together. This idea was incorporated in an Act of Parliament, and the Department of Health and Social Security was given the task to carry out a detailed analysis of the major problems and conditions for research. A report was called for which would enable the M.R.C. to consider whether a national research centre should be created. The Rawson report is criticized principally because it did not fulfill the task given to the D.H.S.S. by the Act of Parliament. It is difficult to imagine how a single person not familiar with this field of research could prepare such an analysis requiring an insight to complex problems of hearing loss and fundamental problems of research. This was the task for a small working party.

Dr. Scott mentioned as a great merit of Dr. Rawson's report that it drew attention to certain problems of adult deafness. This, of course, has been done even more forcefully and in greater detail many times in the past. Dr. Rawson quotes extensively from the report of a working party on the elderly deaf (of which I happened to be the chairman), which was submitted to the Department of Health and Social Security in 1970. There was no need to do this. The author of the Working Party report could have given a much more detailed and comprehensive treatment of the subject if he had used the Report of the D.H.S.S. The Working Party report was not even mentioned in the new report.

Dr. Scott mentioned that the report of a new working party is required in order to solve the urgent problems of sensorineural hearing loss. The conclusion of Dr. Rawson's report, and subsequently of the Medical Research Council, is that we should carry on more or less in the same manner as we did for years. It is suggested that present facilities should be increased, perhaps a few more grants should be given, a few more small isolated research centres should be created, some kind of committee to “coordinate” research should be formed, and so on.

This shows a fundamental misunderstanding of the logical problems of research into major problems of deafness is. - I am, etc.,

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Neurotoxicity of Intrathecal Chemotherapy for Leukaemia

SIR,-Though intensive intrathecal chemotherapy for the prophylaxis and/or treatment of acute leukaemia of the central nervous system has greatly contributed to increased survival, severe neurological damage is being reported not infrequently after both methotrexate and cytarabine (cytosine arabinoside). Six cases of severe neurotoxicity, ranging from seizures to paraplegia, have been ascribed to Stajzel et al. and another two have been reported by Kay et al. All were in young patients with acute lymphoblastic leukaemia and the chief offending drug was methotrexate. We wish to report briefly the case of an adult leukaemia in which the nervous damage was caused by intrathecal cytarabine.

A 50-year-old physician was diagnosed as having acute myelogenous leukaemia in September 1971. He was treated with various combinations of vincristine, cytosine arabinoside, cytarabine, and thioguanine and went into complete remission, fully resuming his medical activity, until January 1975, when he developed hand tremors and somnolence. On 9 February he was admitted to hospital because of severe retinalia headache and drowsiness. Though the bone marrow and blood were normal, the cerebrospinal fluid contained 400 blast cells/μL, and 10 mg per ml of methotrexate and cytarabine were given intrathecal in a total dose of 15 mg on 27 February. Three days later the cerebrospinal fluid was clear of cells, while signs and symptoms disappeared within 24 hours. He was treated with the same combination, first twice, weekly, then weekly, and later every two weeks.

On 10 March the patient was given 50 mg of cytarabine intrathecally. After a few hours he developed a non-productive cough and hoarseness. After three days he was swallowing with difficulty and after five days he had complete dysphagia and aphonia. Later he developed diplopia and left accessory nerve paralysis, so that the clinical deficit included the sixth, ninth, tenth, and eleventh cranial nerves. The patient was treated conservatively, and complete recovery of all pareses occurred in about three weeks except for persistence of moderate diplopia, which cleared up in two months.

Two theories have been proposed for the mechanism of antimitabolite neurotoxicity, which is still unclear. The possibility of damage by the antimitabolites to the nerve roots within the subarachnoid space is supported by its reversal with folic acid. However, the demonstration of neurotoxicity in two preservatives, methyldoxbenzate and benzyl alcohol, has made them also highly suspect. Perhaps a better prophylaxis of antimitabolite neurotoxicity will be achieved by avoiding both higher doses and dilution with preservative-containing diluents.-We are, etc.,

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1 Saiki, J. H., Thompson, S., Smith, F., and Atkinson, R. N. Cancer, 1972, 28, 370.