Sept. 22, 1958

Dr. C. H. Stuart-Harris
The University of Sheffield
Department of Medicine
The Royal Hospital
Sheffield 1, England

My dear Stuart-Harris:

Thank you very much for your letter of August 5th and for the data sent to me by Dr. Clarke with his letter of August 27th which arrived during my absence in Europe. In going over your data I find that only 3 of the 14 children (numbers 1201, 1205 and 1303) were without antibody for type 3 poliovirus prior to inoculation with Salk vaccine. This, of course, also is on the assumption that comparable results would have been obtained if their serum had been tested undiluted rather than as a 1:4 dilution. My own experience has shown that there is a certain proportion of individuals who have type 3 antibody demonstrable only in their undiluted serum as well as some in whom the test carried out in tubes is negative while the pH test reveals the presence of antibody. At any rate the 14 children can be divided into 2 groups with reference to analysis of their response to the feeding of the type 3 virus; the group of 3, without preexisting type 3 antibody, and the group of 11 with type 3 antibody indicative of previous natural infection with the virus. When the 14 children are so categorized one finds that 2 of the 3 in the first group excreted virus and only 3 of 11 in the second group. Whether or not the fact that the virus was fed in a gelatin capsule (I never use such capsules and cannot quite see the reason for doing so) or whether other factors were responsible for the failure of the third child without preexisting antibody to show evidence of viral multiplication is difficult to decide with this small number of individuals. You will recall that I have previously reported finding that when a dose of about 100,000 TCID of type 3 virus is fed to naturally immune individuals that I found evidence of virus excretion and antibody response in 50% of the individuals without reference to the level of their naturally acquired antibody. Your results, therefore, in both groups led me to suspect that the administration of the virus in the gelatin capsule
might in certain instances not have provided a suitable infective dose.

I find it difficult to understand the antibody data in children No. 1201 and 1308 in whom there was no antibody response following multiplication of the virus, since you indicated in your letter that the duration of virus excretion was from 3 to 5 weeks. This type of result I have never found in a very large experience except in a few instances in which the virus was fed within a very short time after the second dose of Salk vaccine (see pages 234 and 235 in the enclosed reprint). I have recently completed a rather extensive study on the effect of feeding the type 1 and type 3 viruses to children who have had 4 doses of Salk vaccine. I am sending you herewith an excerpt from my annual report to the National Foundation in which the results are summarized. Also enclosed are the tables in which the data on antibody response and virus multiplication are presented in detail.

I am also sending you a copy of a table containing the results of tests on the neurotropism of excreted type 1, 2 and 3 viruses obtained by Professor J. D. Verlinde.

I hope to have time to submit for publication before the end of this year the data that I am sending you herewith. I appreciated the sentence in your letter that you would keep me fully informed before you publish your own data. The tests carried out on 14 children by themselves do not throw very much light on the problem because of the small number of children without preexisting type 3 antibody and I hope very much that you will find it possible to carry out additional studies.

You may be interested in the following recent developments regarding field trials with aliquots of the large lots of vaccine that I had prepared. Beginning in October of this year the Ministry of Health in the Soviet Union has authorized a field trial on 200,000 children predominantly under 6 years of age - 100,000 to be tested in the Leningrad area by Professor Smorodintsev and his associates and another 100,000 in the Novosibirsk area by Professor Chumakov and his associates. The tests in the Soviet Union are to be almost
entirely on children without any prior vaccination. In Czechoslovakia the Ministry of Health has undertaken to carry out a field trial on the feeding of live poliovirus vaccine to 200,000 children who had already had 3 doses of Salk vaccine. In Czechoslovakia, all children under age 12 have already received Salk vaccine. The 200,000 which are to receive the live virus vaccine in one part of the country will be followed up over a period of years and compared with another group of 200,000 in another part of the country who will receive a fourth dose of Salk vaccine, and these 2 groups in turn will be compared with the remaining children who will receive no additional vaccination of any kind. Careful studies on the spontaneous immunization of familial and school associates above the age of 12 will be carried out in the areas where live virus vaccine will be fed.

The results of feeding 3,000 children predominantly under 5 years of age in Mexico earlier this year were so satisfactory that I have been informed of plans to extend the field trial this autumn to 200,000 children under age 5 in two large Mexican cities. Other studies now in progress in Chile are particularly concerned with the immunization of infants 2 to 4 months of age almost all of whom still possess some placently transmitted antibody. It is also expected that upon completion of this study certain field trials will be undertaken in Chile. Japan is just now initiating studies on a small scale and I don't know what their future plans might be. I thought you might be interested in these developments. It is expected that by the Spring of 1959 there may be enough data from the various field trials to warrant a special meeting on live poliovirus vaccine under the auspices of WHO.

With best wishes and kindest regards.

Sincerely yours,

Albert B. Sabin, M. D.

ABS:meh

Encls.