Dear Doctor Sabin,

I send you my best regards from Prague.

In spite of that our work on the antigenic stability of polio viruses is not yet finished, I should like to inform you of some of our preliminary results dealing with this problem, and also of our results achieved in the intratypic serodifferentiation testing /ITS/ of polio viruses isolated in polio patients and healthy children in Czechoslovakia during 1959 - 1960.

Most of our results were gained by means of the Wecker's technic for ITS. The antisera used were prepared in rabbits according to the immunization scheme recommended by Mc Bride for the preparation of early immune sera /Virology, 7,45/.

For the present we have systematically studied nearly entirely the antigenic variation in type 1 viruses.

The results achieved suggest:
1/ original Mahoney strain /Mahoney KP 12/ seems to be heterologous to LSc virus when tested against the LSc antiserum. On the other hand LSc virus is neutralized by the Mahoney antiserum approximately to the same extent as the homologous strain.
relation was determined between Mahoney KP 12 and Mahoney KP 34. Original LSc and LSc 2ab seem to be antigenically identical;

2/ the rct 39,5°C +, d + rct 39,5°C -, d + rct 39,5°C + mutants obtained in vitro could not be differentiated from the LSc strain when tested against the LSc antiserum. The same result was obtained when testing a rct 39,5°C + strain isolated in a vaccinated child. Also the derivative of this strain isolated from the lumbar cord of a monkey paralysed after intramuscular inoculation of \(3 \times 10^7\) PFU, did not differ from LSc virus, when measured by the neutralizability by the LSc antiserum;

3/ on the other hand some strains isolated in vaccinated children are not identical with the LSc strain, although they stand close to it. Two points might be of special interest. At first, it was possible to demonstrate a certain variation of the antigenic character in the course of virus multiplication in the alimentary tract. At second, we have evidence that the virus population of some strains isolated is not represented by virus particles which are antigenically homologous;

4/ immune sera from individual animals differ in their strain specificity.

I think, that it is too early to make any conclusions based on the results mentioned. A very serious problem of the interpretation of the results achieved in the reciprocal test is the different strain specificity of individual antisera. It seems, however, that the antigenic marker of the polio strains can change after the passage in the human alimentary tract and that the intratypic antigenic character /at least in the case of LSc strain/ is not so stable, as it was suggested in the last year. Further, it seems that this change is probably not controlled by the same genetic locus as the rct and d characters.

Our further results were achieved in testing polio virus strains isolated from patients and healthy children. Up to the present time we have investigated only a part of type 1 and type 2 strains /by means of the Wecker's technic and LSc and P 712 antisera/.
The first results show:

1/ all the strains investigated up to the present time (total of 13 strains, including 4 strains isolated in vaccinated regions), which were isolated from paralytic patients in the course of 1959, were found to be antigenically different from the vaccine strains;

2/ some of the strains isolated in paralytic cases which appeared during a short period after the mass vaccination at the beginning of 1960 seem to be antigenically identical with the LSc or P 712 viruses. Other characters of these strains are now studied;

3/ all type 2 strains investigated until now, which were isolated from healthy children in the vaccinated regions in the course of 4 months after the beginning of the first vaccination campaign (1959), seem to be antigenically identical with P 712. On the other hand strains isolated 7 and 11 months after the vaccination gave a heterological reaction;

4/ when studying the possible spread of the vaccine viruses into the neighbouring unvaccinated regions, 6 type 2 and 26 type 1 strains isolated from healthy children were investigated. All type 2 strains seem to be antigenically different from the vaccine strain; however, 3 of the type 1 strains isolated in 2 different laboratories outside Prague were found to be antigenically identical with LSc strain. Two of these strains possessed Rect 39,5°C - character, the third one had Rect 39,5°C + character. I do not think that the conclusion that the vaccine strains spread from unvaccinated regions can be simply drawn from this finding. A series of other factors has to be analysed.

I should like to thank you once more for your kind help you proved to us. I should be obliged to you very much if you can write me something about your own results, or, if you are not more engaged in this problem, about the evidence you have of results
achieved outside your laboratory.

If you would be interested in our further results, I should inform you of them as soon as they will be available.

I should like to present the results achieved in studying the antigenic stability of your strains at the European symposium on Poliomyelitis to be held in Oxford, September 1961.

Please, remember me to Mrs Sabin and your coworkers.

Yours very sincerely

V. Vonka, M.D.