

From: Leo Szilard

May 7, 1959

Memorandum on conversations with Jim Watson on May 4, and with Roger Revelle on May 5, regarding the hypothetical possibility of convincing Jonas Salk to set up a research institute for basic and applied biology at La Jolla in loose affiliation with the University of California at La Jolla.

On May 4, I happened to meet Jim Watson by accident. I had previously heard from Francis Crick that Watson has been thinking a lot about the cancer problem and so I asked him about this. Watson explained to me his reasons for believing that, with the techniques at hand, it should now be possible to obtain relevant information about the nature of cancer. As the conversation continued it turned out that he was actively exploring the possibility of setting up a research laboratory staffed with people who are interested in the basic problems of biology, but who are also sufficiently interested in applied problems to enjoy cooperating with each other on the problem of cancer.

On an earlier occasion, I, myself, had given some thought to the question of what it would take to create a research institute in which people, mainly interested in basic biological research, ~~would~~ would take an interest in some of the major problems of public health and medicine.

Watson and I were agreed that in order to make such an operation successful one would have to create conditions which would make it possible to get practically every one who is desirable to join us. One necessary condition for this would be to set up the institute in California in the Berkeley, Palo Alto, or La Jolla area. Next Watson and I attempted to define what kind of people would be desirable. For this purpose we proceeded to list the following names: Kalckar, Berg, Mitchison (Edinburgh), Dulbecco, Khorana (Vancouver) Meselson (Cal Tech), Jacob (Paris), Smith (of Markham & Smith), Tom Anderson (Philadelphia), Lenox, Stent (Berkeley), and Pardee (Berkeley).

Watson and I also agreed that more men whose main interest is anti-body formation, delayed hypersensitivity, and tissue transplantation ought to be added.

Apparently Jim Watson and I think alike on what kind of people it would take to get a successful research operation going.

I mentioned to Jim Watson that Jonas Salk had been thinking of perhaps setting up a somewhat similar research institute and that his thinking on what it would take to create conditions in which scientists could work happily in the field of basic biological research might come rather close to our own thinking on this subject. I told Jim Watson

that Salk realizes that such a research institute should be affiliated with a university but should not be run by the Board of Trustees of the university or be subject to the numerous rules under which the university operates.

In conclusion, I told Jim Watson that perhaps we ought to look for a university in California which would invite Salk to set up an institute along the lines along which he had been thinking in the last few years. In many respects the ideal location would be La Jolla where the University of California is in the process of building up a graduate school which might include the first two years of medical school centering on the basic biological sciences. I told Jim Watson that knowing Roger Revelle, who is the Director of this operation at La Jolla, it is my guess that he and Jonas Salk would quickly reach a meeting of the minds on what needs to be done and how it should be done.

I saw Roger Revelle on May 5 on another matter and I made use of this opportunity to review with him my conversation with Jim Watson. I also told him what I knew of Salk's reluctance of setting up a research institute under the domination of a university. I found on all the points which I touched an enthusiastic response on the part of Revelle, including even the people whom Jim Watson and I have hastily listed. Revelle asked me to contact Salk and find out whether he would be willing, in principle, to consider setting up an

institute at some place other than Pittsburgh. Revelle thought that it would be comparatively easy to obtain at La Jolla a tract of land, as a gift, upon which such an institute could be built, if Jonas Salk were willing to set up such an operation at La Jolla. I told Revelle that I would explore this and let him know if it appears desirable that he and Jonas Salk get together early in June.

cc: Jim Watson
Roger Revelle
Jonas Salk

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cc: Jim Watson
Roger Revelle
Jonas Salk

November 7, 1959.

MEMORANDUM

by Leo Szilard.

This memorandum contains a proposal for a method which might permit us to appraise the amount of urinary retention without catheterization of the patient. There are two alternative procedures discussed below. In either of these two alternatives the retention volume is determined not in terms of ml. but in terms of the volume of urine excreted by the patient per unit time. In order to have a rather constant flow of urine the patient would have to refrain from taking liquids, for a period of a few hours, prior to the examination.

FIRST ALTERNATIVE: One injects the test substance which is excreted in the urine. One would choose a substance which equilibrates rather quickly between the circulation and the intercellular space of the body.

Just prior to the injection the patient is asked to empty the bladder, as well as he can. Half an hour, or one hour, after the injection the bladder is emptied again, a sample of urine is taken, and the concentration of the test substance in this sample is determined. Another half hour or an hour later a second sample is taken and again the concentration of the test substance in the sample is determined.

If there is a substantial retention, the concentration of the test substance in the second sample will be substantially higher than in the first sample, which is diluted by the retention volume.

On this basis it should be possible to estimate the retention volume.

The concentration of the test substance in the urine could be most conveniently determined by using a test substance which can be assayed colorimatically.

SECOND ALTERNATIVE: In this case a test substance A is chosen which is excreted by the kidney in the acetylated form. A dose of this test substance A (which should be absorbed rapidly from the intestinal tract) is given per os, a few hours prior to the examination.

The patient is asked to empty the bladder about once an hour, after having swallowed a dose of the test substance and prior to the medical examination.

At the time of the examination the bladder is emptied and the concentration of the test substance A in the urine is determined.

Thereupon the patient is given an injection of a substance B (the blocking substance) which is also excreted by the kidneys in the acetylated form and which competes with the test substance A for the

acetylating capacity of the kidney. Shortly after the injection of the blocking substance there will be a rapid drop in the rate at which the test substance is excreted.

Half an hour, or one hour, after the injection, the patient is asked to empty the bladder as well as he can. A sample of urine is taken and the concentration of the test substance A in this sample is determined.

Another half hour or one hour later a third sample of the urine may be taken and the concentration of the test substance A in the sample is again determined.

If there is substantial retention volume the concentration of the test substance A in the second sample will be substantially higher than in the third sample, because the concentration in the second sample is increased by the relatively high concentration of the test substance in the retention volume.

From the three concentration figures obtained it should be possible to appraise the retention volume, in terms of the urine flow per unit time.

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