pear, takes on, therefore, special significance for the pathogenesis of poliomyelitis in man and the monkey.

The virus has not been detected in the cerebrospinal fluid withdrawn by lumbar puncture from cases of epidemic poliomyelitis. Since the virus as originally present in human nervous tissues is of low infectivity for monkeys, the failure to induce disease in those animals by the inoculation of the fluid is not conclusive evidence of its absence from the fluid. The virus employed for the experimental, nasal instillation is highly potent for monkeys. Hence the altered cerebrospinal fluid withdrawn from the animals so inoculated was injected intracerebrally into *Macacus rhesus* monkeys, and the procedure was followed by an accelerating injection 8 days later.[3] No detectable pathological effects arose in these animals.

The conclusion to be drawn is that in man and the monkey the virus of poliomyelitis, even in small amounts, does not pass from the infected nervous tissues into the cerebrospinal fluid. The cellular changes in the fluid represent, therefore, a reaction of the nervous system to injury; they are not the result of the presence of the virus in the fluid itself.

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THE LONG AND SHORT WAVE-LENGTH LIMITS OF PHOTOSYNTHESIS

DURING the past few years we have developed a method of studying photosynthesis in various portions of the spectrum that seems to give reproducible and accurate results without interference from the secondary effects of the different wave-lengths. The method consists of a preliminary adjustment of the plant to the radiation intensity to be used. Then the actual determinations are made by exposing the plant to a steady source of one portion of the spectrum for two hours, determining the amount of carbon dioxide used, followed by exposure to such an intensity of a second portion of the spectrum that the amount of carbon dioxide used is the same as in the first case. Under these conditions the relative efficiencies of the two radiations are inversely proportional to their intensities. The advantages of this experimental procedure are that the plant is acclimated to the low radiation intensities which it receives during a determination, the exposure to an isolated portion of the spectrum is short and that, under these conditions, the amount of photosynthesis in the two determinations is probably the same.

The limits of photosynthesis were determined in the following manner. The plants were exposed to radiation well within the limits and then to radiation about half of which was within the limit and half just outside. From the relative efficiency of this latter radiation the limit was calculated on the assumptions that the limit of photosynthesis was sharp, the amount of photosynthesis was a function of the number of quanta and not of the energy of the radiation and that the quantum yield was constant. Further investigation of these points is being conducted. The table given below is typical of the results obtained with Norway spruce in determinations of the long wave-length limit.

Expt. No.	Efficiency	Experimental error
	Per cent.	Per cent.
50	40.5	16
51	41.6	5
52	40.6	4
53	44.1	6
54	46.3	4

Weighted averages of these and similar determinations gave the following results. An experimental error of 4.25 per cent. would result in an error of 50 Å.

Tree	Efficiency	Limit of photosynthesis
	Per cent.	Å
Norway Spruce I	42.8	7430
Norway Spruce II	40.5	7380
White Pine III	39.7	7340
White Pine IV	41.5	7390
Norway Spruce I	65.4	4660
Norway Spruce II	65.2	4660
White Pine I	66.1	4650
White Pine II	73.3	4490

A complete account of this work will be published elsewhere.

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[3] S. Flexner, SCIENCE, 74: 520, 1931; 77: 413, 1933.