

STANFORD UNIVERSITY

SCHOOL OF BIOLOGICAL SCIENCES

STANFORD UNIVERSITY, CALIFORNIA

May 10, 1946

Dear Viktor,

I realize that the tuition fees required of teaching assistants are excessive, and I think something will have to be done about it. I plan to start some agitation concerning the matter, although I realize my influence in the financial conduct of the university may be pretty puny.

It is quite possible, if not probable, that I shall be able to give Miss Eggers some work in scientific illustration, although I cannot commit myself on this point until I see better how my research budget shapes up for next year. There is also another possibility, although it is best not to mention it to Miss Eggers. It is definite. We have a \$200 scholarship which has been made available recently, and if this were attached as a 'rider' to Miss Eggers' stipend it might relieve her situation somewhat. As soon as we can poll the department to learn whether there are others with stronger claims, we shall let you know whether Miss Eggers can be given the award.

I did quite a bit of work on Typhlotriton at one time, but I did not bring it to completion and I doubt that I shall, now that I am so far removed from the source of material. Barden, a former student, also got some material while he was at Cornell and did some work on the problem, but I believe that he also failed to arrive at anything definitive. The problem is a promising one, however, and I hope your student will proceed with it. Among other things I exchanged larval eyes between Typhlotriton and Eurycea multiplicata, and observed their behavior at metamorphosis when the lids appear. Because of various considerations, I did not regard the results of this as conclusive, and I don't believe it is a very critical approach. Another experiment which I performed was to attempt to simulate the phenomenon of lid-overgrowth in other species, by replacing the cornea and eye-ball of large Pseudotriton larvae with those from younger larvae of the ~~same~~ same species. When the relative size of the eye and the lid-forming tissue is disturbed in this manner, the lid overgrows the small eye in very much the same manner as in Typhlotriton, but I apparently did not carry the metamorphosed hosts for a sufficiently long period of time for any degenerative changes to ensue in the retina, if indeed this would have occurred at all. I think the most interesting experiment was one in which I removed the eye muscles from the larval Typh. eye and obtained subsequently a rather marked overgrowth of the lids even when the larvae were reared in the light during metamorphosis. This suggested to me that lid overgrowth may occur in the dark because of the lesser mobility of the eye, with perhaps a consequent reduction of the growth of eye because of "disuse". Whether this is plausible or not

I cannot be sure. There is also one 'catch' to this experiment. In removing the eye-muscles it is usually necessary to remove quite a bit of the soft connective tissue surrounding the eye, so that the latter might subsequently lie in a somewhat more sunken position and hence facilitate overgrowth of the lids in this manner. In any event, the experiment shows that at least the first change ~~change~~ leading to cave-blindness, ~~and~~ namely the overgrowth of the lids, can transpire entirely independently of darkness.

You are free to follow any of these leads which you wish, but if you don't mind, you might first get in touch with Barden (Dr. R. B. Barden, Dept. of Anatomy, U.S.C. Med. School, Los Angeles) and learn whether he is definitely planning on completing the work he began. Even if he is, however, which I doubt, there is of course no reason why your student should not feel free to tackle the problem.

With best regards,

Victor J.

I did quite a bit of work on Taphelidion at one time, but I did not bring it to completion and I doubt that I still have that I am so far removed from the source of material. Barden, a former student, also got some material while he was at Cornell and did some work on the problem. But I believe that he also failed to arrive at anything definitive. The problem is a promising one, however, and I hope your student will proceed with it. And other things I exchanged letters with Barden, and observed their behavior of metamorphosis when the lids appear. Because of various considerations, I did not regard the removal of this as conclusive, and I don't believe it is a very critical approach. Another experiment which I performed was to attempt to stimulate the phenomenon of lid-overgrowth in other species, by replacing the cornea and eye-ball of larval Taphelidion larvae with those from younger larvae of the same species. When the relative size of the eye and the lid-forming tissue is displaced in this manner, the lid overgrows the eye in very much the same manner as in Taphelidion. I experimentally did not carry the experiment beyond stages a sufficient time period of the eye and lid overgrowth occurred at all. I think the most interesting observation was one in which I removed the eye and lid-forming tissue from the eye and obtained subsequently a cavity which overgrew the eye even when the larvae were reared in the light during metamorphosis. This suggested to me that lid overgrowth may occur in the dark because of the latent capability of the eye, with perhaps a consequent stimulation of the growth of eye because of darkness. Whether this is possible or not