

St Hemblington Cottages, Queen's Road, Dalston  
30/V. 61. London N.E.

My dear Sir,

I have been out of town for some little time or you should have had an earlier reply to yours of the 16<sup>th</sup>. The fungus by which the roach you sent me was attacked is the 'Achylya proliferans' - it has been repeatedly described. Perhaps you may be able to get a sight of a carpenter's little book - "The Microscope & its revelations" - if you should you will find a brief notice of it at pp. 350-357. A still better abstract of what has been done about it is in the Micrographic Dictionary - art. 'Achylya'. It not infrequently attacks gold-fish, and may be bred at any time for observation during



the hot weather by throwing a dead beetle  
or fly into water. I examined it carefully,  
and you are quite correct as to its not  
entering the scales - indeed unless it after-  
wards during the progress of decomposition, enters  
the substance of the body it is entirely super-  
fluous in its attacks. Some scales appear  
as if a network had been formed in them, and  
the more I examine of the fungus underneath being very greatly smaller -  
I really was almost ready to suppose so, till  
careful wiping of both surfaces, which would  
not have affected anything in the substance  
of the scale proved that the filaments were  
external only. I haven't thought it  
necessary to draw it, but could easily, if  
you thought anything would be gained by it.  
The little piece of fungus proper enclosed  
with the roach I also examined - it is  
interesting in its way, & a capital example  
of true fungus-structure.

You asked me some time ago about

some of "the smallest calibre of borings of the  
Flonius, and in what bodies are the smallest  
workings found." I have not seen Dr. Howes back  
back him, but he hasn't worked at these things  
especially his rather inclined to push - push them  
so I fear little satisfactory would be learned  
about them from him. Albany Hancock's draw-  
ings of minute borings are not to scale, so that  
from them no measurements could be taken,  
and I am not able at present to refer to his papers  
unless he gives any. But from my own  
knowledge, I can say that if we may assume  
these in fish-scales to be borings, the smallest  
are to be met with in fragments of the shells  
of Rhizopoda, and are not more than  $\frac{1}{10000}$  in  
in diameter.

The mycelium of Fungi is the earliest stage of  
growth of these organisms - the first formation from  
the spores; it is formed of minute capillary  
threads, so thin very thin the term 'thallus' is applied  
to it. From the mycelium, which may aptly be  
compared to the roots of the higher plants, the  
fructification is produced, usually on aerial stems.



To a further question of yours, my own belief is that the "borings" in fish - scales, have probably been made by minute animalcules, none of the algae proper are sufficiently minute for the purpose. The mycelia of some fungi growing in water might be small enough, but the confused branching of these is quite distinct from the singularly regular arrangement of parts in what must for the sake of knowing what we are talking about, be termed "borings". It is not in accordance with any thing known of Rhizopus life to suppose that they might be produced by these latter animalcules.

Before Kolliker's theory can be admitted it will be necessary to prove the existence in the sea of Fungi - this has not been done, nor is there a single fact known that warrants the belief in the existence of any such. The drawings should reach you by same post with this.

Thank you for your kind Enquiry, - my dear Mrs West was taken from me in December, and is now, we have every reason to think, eternally happy - but 'cheer miki'!

C. R. Rose Esq.

Yours of Sincerely,  
Suffen West