

STUDIES ON POLLEN.

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Since the time of Amici it has been known that pollen grains germinate and send out one or two tubes. Amici carried on his studies on this point on the plant *Portulaca oleracea*. Ever since the work of Amici various investigations have been made on the germination of pollen and especially concerning the different conditions that would promote its growth. Even yet, many points remain obscure and much investigation will be necessary before these are solved. As the chemical nature of the stigmatic fluid is complicated and varies greatly in different plants, it renders the culture medium used to induce growth a matter of one experiment after another with different media in order to ascertain which will induce growth or is best adapted to the various cases. Of course it is known that in a good many cases a sugar solution will cause growth, but this is by no means the case with the pollen of all plants, so that other means frequently have to be tried. Moreover the physical character of the culture medium is a factor that has been very generally overlooked.

In the experiments here mentioned I have investigated to date the behavior of the pollen of 435 plants with respect to a culture medium of cane sugar. Of these, 110 showed no response whatsoever as no growth occurred. The remainder showed a more or less pronounced growth. A wide range in the percentage of the cane sugar solutions was used so that ample opportunity for growth was afforded by this medium if such a medium would produce it. Plants from many different families as well as from the same family were tried so as to see in how far differences in germination under such conditions would occur.

