

FIELD OBSERVATIONS ON RUSTS FOR THE GENERAL BOTANIST.

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(Abstract).

The polymorphic character of many species of rusts, together with the discontinuous growth between the forms of most of such species, and the further fact that some species live upon unlike hosts at different stages of their life cycle, make the study of the rusts unusually attractive for those who enjoy a varied problem. A very important part of the field observation consists in later visits to the spot where a rust has been found in order to ascertain if it is followed by another form of the same species either on the same host or on a host of some other kind. In either case, but especially the latter, a suitable specimen of the rust may be taken to a locality where it does not occur and placed beside a healthy plant of the kind observed. It is then watched to see if the rust infects the healthy plant. If it does, the correctness of the inference from the first observation, that the two forms of rust found to succeed each other in the same locality belonged to the same species, is established. But if the healthy plant does not become infected, either the two forms found in the original locality belong to distinct species and only incidentally happen to follow one another, or else the sowing of the rust in the new locality was not well done. In either case further trials and observations are required. There are many variations to the inferential and deductive reasoning required to solve these problems, and to come to a conclusion repeated observations may be required extending over many months or even years.

