their reported anti-auxin analogues (2,6-D, DCA, TIBA and others).

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Anthracnose Fungi of Olives

GORTER¹ has referred recently in a communication on this subject to my observations² on *Gloeosporium olivarum* Alm. I am afraid, however, that he did not interpret correctly my description in Italian of the bundles of long, sinuous and flexible hyphae which can be seen sometimes at the periphery of the acervulus. In my paper I pointed out that these hyphae are not setae, and in a later paper³ I carefully followed their formation and tried to interpret their origin, which I believe is connected with the mechanism of eruption of the stromata, especially if certain environmental conditions prevail.

Foschi⁴ extended my observations. He kept populations with these peculiar outwardly developing hyphae within the genus *Gloeosporium* S. et S., but on account of their morphology and their cultural characters he segregated them from *G. olivarum* and referred them to an old species by Petri, *G. olivae* Petri (= *Cylindrosporium olivae* Petri). I may add that: (a) after cultural and inoculation tests with two isolates of *G. olivarum* and one isolate of *G. fructigenum* Berk. from apple, I concluded⁵ that these isolates of *G. olivarum* were referable to *G. fructigenum* Berk.; (b) it seems undesirable to establish a classification of these very variable organisms on the findings by Struble and Keitt⁶, which are intended to elucidate genetical phenomena and do not seem to be immediately useful for classification purposes, especially in the light of recent views⁷ on sexual behaviour in the genus *Glomerella*.

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A New Group of Compounds with Diamond-type (Chalcopyrite) Structure

It is now possible to confirm the existence, previously predicted¹, of a new group of compounds with chalcopyrite structure, and of general formula $A^{II}B^{IV}XV_2$, where A^{II} is zinc or cadmium, B^{IV} is silicon, germanium or tin, and XV is arsenic or phosphorus. The new II—IV—V₂ compounds can be derived formally from III—V zinc blende compounds

Table 1

Chalcopyrite structure	Unidentified constitution*	Incomplete reaction of constituents
ZnSiAs ₂ , ZnGeP ₂ , CdGeP ₂ , ZnGeAs ₂ , CdGeAs ₂ , ZnSnAs ₂ , CdSnAs ₂	ZnSnP ₂ , CdSnP ₂	CdSiP ₂ , CdSiAs ₂ , ZnSiSb ₂ , CdSiSb ₂ , ZnSiBi ₂ , CdSiBi ₂ , ZnGeSb ₂ , CdGeSb ₂ , ZnGeBi ₂ , ZnSnSb ₂ , CdSnSb ₂

* Not single phase

by substituting for every two atoms of the group III element one atom from each of groups II and IV (for example, GaAs → ZnGeAs₂).

Preliminary results of the investigation are summarized in Table 1, and refer largely to preparations carried out in sealed evacuated silica tubes, heated at 1,000–1,100° C. (with an external argon pressure of up to 35 lb./in.² to compensate for the high vapour pressure of some constituents). Seven compounds with a chalcopyrite structure have so far been found, as in the first column. It is, of course, possible that under different conditions of preparation some of the other compositions tried might have crystallized in this structure. In this connexion, however, I—III—VI₂ chalcopyrite compounds (for example, CuInSe₂) have lower melting points and appear to be less stable than the related II—VI zinc blende series^{1,2}. Hence it seems probable, by analogy, that members of the new group would be less stable than related III—V zinc blende compounds. In view of the low melting point of InSb, this may account for the absence from the group of antimony and bismuth analogues. For the same reason analogues containing mercury or lead also may not form, though their preparation has not so far been attempted. Analogues containing beryllium or magnesium may, however, exist.

The new compounds are semiconductors much resembling the I—III—VI₂ series^{1,3}. Specimens suitable for electrical measurements have not been obtained, but optical measurements have given the energy gaps shown in Table 2. These values confirm the expectation that the energy gap for a given II—IV—V₂ compound is determined largely by the IV—V bonds, the weaker of the two types in the structure. On this view, the energy gap is (a) lower than that for the related III—V compound (that is, AlAs for ZnSiAs₂, GaP for CdGeP₂); (b) higher than that for the related Group IV element (interpolation may be necessary; CdGeP₂ is thus related to the 'element' GeSi). We suggest that bond-strength increases along the sequence IV—IV, IV—V, III—V owing to increasing bond ionicity, and that energy gap follows suit⁴. (The influence of the II—V bond is probably relatively small and in any event is com-

Table 2

Compound	Energy gap (eV.)
CdGeP ₂	1.8
ZnGeP ₂	2.0–2.4*
ZnSiAs ₂	2.1
ZnGeAs ₂	> 0.6*
ZnSnP ₂	2.1
CdSnP ₂	1.5

* The absorption edge obtained was not sharply defined.