Während bei den meisten $A^{II}B^{IV}C_2^V$-Verbindungen der geordnete Zustand, also das Chalkopyrit-Gitter auftritt, ist bei den $A^IB_3^{IV}C_3^V$-Verbindungen mit einem Atomverhältnis $A^I:B^{IV}$ von 1:2 ein Ordnungszustand im Kationen-Teilgitter weniger wahrscheinlich. Dies dürfte ein Grund dafür sein, dass nur einige wenige der theoretisch denkbaren $A^IB_2^{IV}C_3^V$-Verbindungen existieren, jeweils mit ungeordneter Zinkblendestruktur.

Die Verbindungen $MgGeP_2$, $CuSi_2P_3$ und $CuGe_2P_3$, über die hier berichtet wurde, sind durch Zusammenschmelzen der Komponenten in abgeschlossenen Quarzampullen hergestellt worden. Sie haben durchweg Halbleiter-Charakter, worüber im einzelnen später berichtet werden wird.

Wir danken Frau Dr. Giesecke für die Herstellung und Auswertung der Röntgenaufnahmen.

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Crystallographic data of various lower polypeptides.

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(*Received* 17 *September* 1960)

In order to obtain some information of fundamental spatial configuration of amino acid residues in crystalline part of collagen, the simplest crystalline substrate of collagenase with very high degree of substrate specificity, benzyloxycarbonyl-glycyl-L-prolyl-L-leucyl-glycyl-L-proline, has been taken up (Nagai & Noda, 1959; Nagai, Sakakibara, Noda & Akabori, 1960; Sakakibara & Nagai, 1960). X-ray examination showed that this crystal has at least three modifications (Sasada & Kakudo, 1960).

Related polypeptides with smaller size were also systematically synthesized to compare features of molecular structure (Sakakibara & Nagai, 1960), and X-ray investigation has been made on the crystallographic data of these compounds; i.e. benzyloxycarbonyl-glycyl-L-prolyl-L-leucyl-glycine (I), benzyloxycarbonyl-glycyl-L-prolyl-L-leucine (II), benzyloxycarbonyl-glycyl-L-proline (III) and benzyloxycarbonyl-glycine (IV). The lattice constants and space groups were obtained from oscillation and Weissenberg photographs. Accurate measurements were made by proportional counting technique using single crystal orienter of G.E. XRD-6, the determinations being made on the basis of one crystal setting for each species. The errors of these data are estimated to be within $\pm 0{\cdot}02$ Å in linear parameters.

(I) crystallizes in needle from methanol solution, (II) in needle from methanol solution, (III) in rectangular platelet from ethyl acetate solution and (IV) in block from aqueous solution. Results are listed in Table 1.

It is observed that the one axis of the unit cell increases by about 5 Å when one amino acid residue is added, if the c axis of the dipeptide is halved for the sake of comparison to the cell containing four molecules. This suggests that the molecules in the crystal of each compound are of extended form.

We wish to express our thanks to Prof. S. Akabori and Dr S. Sakakibara of this Institute for continued encouragement and supplying the materials.

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Table 1. *Crystallographic data*

	I	II	III	IV
	$C_{23}H_{32}O_7N_4$	$C_{21}H_{29}O_6N_3$	$C_{15}H_{18}O_5N_2$	$C_{10}H_{11}O_4N$
a (Å)	13·62	10·22	9·50	11·56
b (Å)	27·58	22·18	—	10·33
c (Å)	6·58	9·66	35·16	9·22
β (°)	—	—	—	103·8
D_m (g.cm.$^{-3}$)	1·30	1·28	1·30	1·33
D_c (g.cm.$^{-3}$)	1·28	1·27	1·28	1·30
Space group	$P2_12_12_1$	$P22_12_1$	$P4_12_12$	$P2_1/c$
Z	4	4	8	4