of the hexagonal α-titanium phase and a
great number of extra lines. The latter
also appeared in the photographs of sam-
ple TiO$_2$ (1 < x < 1.12) in addition to a
pattern corresponding to titanium mon-
oxide of sodium chloride type of the ap-
proximate composition TiO$_2$x. The new
phase, the lines of which showed no detect-
able displacements in samples of different
compositions, was pure in the sample
TiO$_2$x and is obviously a new modifica-
tion of titanium monoxide possessing a
very narrow range of homogeneity. The
density was found to be 4.91.

Table 1. Part of Guinier powder photograph of
TiO$_2$x, prepared at 800°C. CuKα$_1$ radiation.

<table>
<thead>
<tr>
<th>I</th>
<th>$\sin^2\Theta_{\text{obs}}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>w</td>
<td>0.0191</td>
</tr>
<tr>
<td>w</td>
<td>0.0300</td>
</tr>
<tr>
<td>w</td>
<td>0.0347</td>
</tr>
<tr>
<td>m</td>
<td>0.0421</td>
</tr>
<tr>
<td>st</td>
<td>0.0539</td>
</tr>
<tr>
<td>m</td>
<td>0.0683</td>
</tr>
<tr>
<td>m</td>
<td>0.0761</td>
</tr>
<tr>
<td>m</td>
<td>0.0772</td>
</tr>
<tr>
<td>w</td>
<td>0.0995</td>
</tr>
<tr>
<td>st</td>
<td>0.1018</td>
</tr>
<tr>
<td>st</td>
<td>0.1038</td>
</tr>
<tr>
<td>st</td>
<td>0.1348</td>
</tr>
<tr>
<td>v st</td>
<td>0.1388</td>
</tr>
<tr>
<td>v w</td>
<td>0.1574</td>
</tr>
<tr>
<td>v w</td>
<td>0.1681</td>
</tr>
<tr>
<td>v w</td>
<td>0.1916</td>
</tr>
<tr>
<td>w</td>
<td>0.2047</td>
</tr>
<tr>
<td>v w</td>
<td>0.2084</td>
</tr>
<tr>
<td>w</td>
<td>0.2154</td>
</tr>
<tr>
<td>w</td>
<td>0.2212</td>
</tr>
<tr>
<td>w</td>
<td>0.2259</td>
</tr>
<tr>
<td>v w</td>
<td>0.2346</td>
</tr>
<tr>
<td>v w</td>
<td>0.2447</td>
</tr>
<tr>
<td>w</td>
<td>0.2578</td>
</tr>
<tr>
<td>m</td>
<td>0.2689</td>
</tr>
<tr>
<td>st</td>
<td>0.2729</td>
</tr>
<tr>
<td>v st</td>
<td>0.2767</td>
</tr>
<tr>
<td>v v w</td>
<td>0.3184</td>
</tr>
<tr>
<td>v v w</td>
<td>0.3302</td>
</tr>
</tbody>
</table>

The powder pattern of the new phase,
listed in Table 1, is of a rather complicated
appearance and probably of low symmetry.
So far it has not been possible to index it.
However, it shows a noticeable similarity
to that of the monoxide of sodium chloride
type. Thus the strong reflexions of the
former appear as doublets close to those
of the latter, i.e. at ($\sin^2\Theta = 0.1017$), $v st$
(0.1358), and $v st$ (0.2714). The similarity
seems to indicate the existence of a struc-
tural relationship between the two phases.
It might be that the structural transforma-
tion is associated with an ordering of the
atomic vacancies present in the cubic
phase.

These studies form part of a research pro-
gram on metal oxides and related compounds
financially supported by the Swedish Natural
Science Research Council. Further studies on
the titanium-oxygen system are in progress.
A detailed report of the investigation will be
published elsewhere.

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The Synthesis of 6-Methoxy-2(3)-
benzoxazolinone

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In this laboratory an anti-fungal sub-
stance was recently isolated from maize
and wheat plants 1. The structure 6-meth-
oxy-2(3)-benzoxazolinone (IV) was pro-
posed for this substance. This has now
been confirmed by the following synthesis:

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Pure p-benzene-azo-resorcin (I) was obtained by the method of Will and Pukall.

The methylation was done by the method of Bechold, with the following modifications: a) methyl iodide was used in the proportion 2 moles to 1 mole of the dry potassium salt of I; b) the reaction time was reduced from 6 h to 3 h (yield: 6 h, 1.5%; 3 h, 14% theor.).

2-Hydroxy-4-methoxy-aniline (III) is very easily oxidized wherefore the following stages were carried out in a carbon dioxide atmosphere: a) II was reduced in a boiling alcohol solution with a slight excess of a saturated solution of sodium hyposulphite in water, the mixture was neutralized with barium carbonate and evaporated almost to dryness (the aniline is removed with the vapour); b) III was extracted from the remaining mixture by peroxide-free ether and after evaporation of the ether it was mixed with glacial acetic acid, about ten times its weight, when the acetate of III precipitated. Phosgene was bubbled through the mixture until the precipitate had dissolved.

After evaporation of the acetic acid in vacuo, dissolving the residue in hot water, treating with active carbon to decolourize the solution, and filtering, IV crystallizes on cooling. Yield 15% of the theoretical. Through recrystallization from alcohol colourless needles, m.p. 166°, were obtained.

The mixed melting point of this substance and the anti-fungal substance of wheat and maize plants showed no depression. Acetyl derivative m.p. 150°C (no depression).

UV spectra (in water): Synthetic product: Max. 229—230 mp and 285—286 mp; Min. 255 mp; Log ε 286 mp = 3.74.

Isolated anti-fungal substance: Max. 285—286 mp; Min. 255 mp.

Acknowledgement. We are indebted to Professor A. I. Virtanen for his great interest in this work and to the Rockefeller Foundation for a grant awarded to the Foundation for Chemical Research.


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On the Preparation of Alkyl Cyanides

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In an interesting paper Lewis and Susi report that the preparation of alkyl cyanides from the corresponding primary bromides gives very good yields when ethylene glycol is used as solvent.

Glycols seem to be excellent for this reaction, being good solvents of alkali cya-