octatetrayne($n = 4$) was found to give two modifications which we shall call α and β. Single crystals of the α form were obtained from ethyl acetate solution, whereas those of the β form were obtained by rapid cooling of petroleum ether solution. Single crystals of α,ω-diphenyl-1,3,5,7,9-decapentayne($n = 5$) were obtained from petroleum ether solution. All these crystals are needles in shape. Triyne is slightly brown, and tetrayne and pentayne are yellow in color. They are photosensitive and seem to be less stable when n becomes higher.

Results are outlined in Table 1, where the values

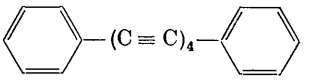
Table 1. *Crystal data of* α,ω-diphenyl-poly-ynes

n	m.p. (°C.)	a (Å)	b (Å)	c (Å)	β	Space group	Z
1*	62·5	12·75	5·73	15·67	115·2°	$P2_1/a$	4
2†	86	14·92	6·04	6·61	105°	$P2_1/a$	2
3	95	23·3	7·04	20·3	125°	$P2_1/a$	8
4α	—	17·74	3·99	10·78	110·5°	$P2_1/a$	2
β	113	19·5	9·08	3·95	99°	$P2_1/a$	2
5	165	17·5	5·12	9·25	112°	$P2_1/a$	2

* Robertson & Woodward (1938). † Wiebenga (1940).

reported by Robertson & Woodward (1938) and by Wiebenga (1940) are also included for reference.

The structure of the α form of α,ω-diphenyl-1,3,5,7-octatetrayne



has been determined using the intensity data collected at −110 °C. The detailed analyses of this modification and of the other members will be reported in later communications.

We express our hearty thanks to Prof. M. Nakagawa for providing the materials at our disposal.

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Crystal data of two substituted nickel ethylenediamine complexes.

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It has been shown recently in this department (Curtis, 1954) that two, three or four molecules of acetone may be condensed on to a molecule of nickel ethylenediamine perchlorate ($Ni(C_2N_2H_8)_2 2ClO_4$) to give three distinct stable products. These may be postulated as nickel–Schiff base complexes having immine linkages external to and coplanar with the ethylenediamine rings bonded to the nickel. All three products are diamagnetic both as solids and in solution, which shows them to have a planar square configuration of nickel bonds (Curtis, 1954). The two compounds having 3 and 4 acetone molecules condensed are expected to have steric hindrance of the methyl groups of the acetone residues, but may be stabilized by resonance effects in the latter case. When only 2 acetone molecules are condensed two possible configurations exist, the *trans* configuration being the most likely. A preliminary crystallographic investigation of those products with 2 and 4 molecules of acetone condensed on to the ethylenediamine rings has been made.

Nickel ethylenediaminetetraacetonyl perchlorate:

Formula $C_{16}H_{32}N_4Ni(ClO_4)_2$ or Ni2en4ac2ClO_4 where
en = ethylenediamine residue $C_2N_2H_4$,
ac = acetonyl residue $(CH_3)_2C$.

Orthorhombic,

$a = 19{\cdot}7$, $b = 16{\cdot}9$, $c = 13{\cdot}6$ Å (all ±1%)
(Cu $K\alpha$, $\lambda = 1{\cdot}542$ Å).

Absent spectra:
$h0l$ when $l \neq 2n$, $0kl$ when $k \neq 2n$, $hk0$ when $h \neq 2n$.
Space group *Pbca*. Eight molecules per unit cell. Density (calc.) 1·58 g.cm.$^{-3}$, density (obs.) flotation 1·57 g.cm.$^{-3}$.

Nickel ethylenediaminediacetonyl perchlorate:

Formula $C_{10}H_{22}N_4Ni(ClO_4)_2$ or Ni2en2ac2ClO_4.

Monoclinic,

$a = 14{\cdot}3$, $b = 12{\cdot}5$, $c = 10{\cdot}3$ Å (all ±1%),
(Cu $K\alpha$, $\lambda = 1{\cdot}542$ Å),
$\beta = 102°\ 40'$ (found by measuring $d(101)$).

Absent spectra: $h0l$ when $h \neq 2n$, $0k0$ when $k \neq 2n$.
Space group $P2_1/a$. Four molecules per unit cell. Density (calc.) 1·68 g.cm.$^{-3}$, density (obs.) flotation 1·68 g.cm.$^{-3}$.

No further work is contemplated with these compounds.

Reference

CURTIS, N. F. (1954). Ph.D. Thesis, University of New Zealand.