$X'_0 = 1.0515$ $\varrho_0 = 46° 30'$ $p'_0 = 0.7955$

$Y'_0 = 0.3461$ $\varphi_0 = 86° 14'$ $q'_0 = 0.6388$

$\alpha = 100° 11'$ $\lambda = 87° 16'$ $a = 1.130$

$\beta = 136° 26'$ $\mu = 44° 58'$ $b = 1$

$\gamma = 105° 37'$ $\nu = 99° 03'$ $c = 0.6206$

$d = 48° 47'$

$f = 28° 23'$

Optical properties:

Biaxial positive, 2V large; birefringence very large, dispersion $v > r$ strong. Optical ax.plane about parallel a(100).

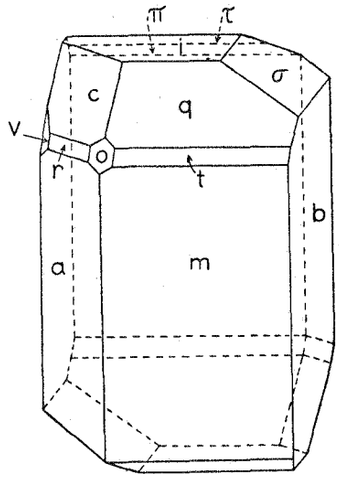

Fig. 1.

Pleochroism strong: n_α = brownish yellow, $n_\beta = n_\gamma$ = greenish yellow.

According to BARKER's [2]) systematic classification of crystals the following characteristic angles have been calculated:

$cr = 15° 46'$ **$am = 41° 26'$** $bq = 63° 38'$

$ra = 29° 12'$ $mb = 57° 25'$ $qc = 23° 37'$

Geological Institute of the University of Amsterdam.

2) T. V. BARKER, Systematic crystallography, an essay on crystal description, classification and identification, London (1930). — P. TERPSTRA, Kristallometrie, Groningen (1946).

Crystallography. — *Crystal description of 1-n-propylamino-2 : 4-dinitronaphthalene* $C_{10}H_5(NO_2)_2NH \cdot C_3H_7(n)$. By L. P. G. KONING. (Communicated by Prof. H. A. BROUWER.)

(Communicated at the meeting of September 27, 1947.)

The organic compound 1-n-propylamino-2 : 4-dinitronaphthalene, $C_{10}H_5(NO_2)_2NH \cdot C_3H_7(n)$, has been prepared by H. W. TALEN [1]). The crystals kindly put at my disposal by Prof. Dr P. TERPSTRA of the Crystallographic Institute of the University of Groningen have been subjected to crystallographic measurements with the two-circle goniometer, the results of which will be given here.

The orange-coloured crystals with a size of 0.1—1.0 mm are prismatic parallel to the c-axis and flattened parallel to b(010).

Cleavage: c(001) and a(100) good.

Triclinic pinacoidal.

Forms: c(001), b(010), a(100), m(110), p(310), n($\bar{3}$10), q(011), t(0$\bar{1}$1).

Face	Symbol	φ	ϱ
1 c	(001)	108° 12′	14° 40′
2 b	(010)	0	90
3 a	(100)	80 48	90
4 m	(110)	25 38	90
5 p	(310)	51 18	90
6 n	($\bar{3}$10)	295 32	90
7 q	(011)	16 11	41 28
8 t	(0$\bar{1}$1)	166 08	46 06

$X'_0 = 0.2481$ $\varrho_0 = 14° 37'$ $p'_0 = 0.4904$

$Y'_0 = 0.0805$ $\varphi_0 = 107° 59'$ $q'_0 = 0.9290$

$\alpha = 83° 14'$ $\lambda = 94° 28'$ $a = 1.9354$

$\beta = 103° 56'$ $\mu = 77° 02'$ $b = 1$

$\gamma = 100° 32'$ $\nu = 80° 48'$ $c = 0.9103$

$d = 51° 25'$

$f = 53° 46'$

As is shown in the figures this compound occurs also twinned.

Optical properties:

Biaxial positive, 2V moderate. Birefringence very strong; Dispersion strong: $v > r$. Optical ax.plane nearly $\perp$ a(100). $n_\beta \wedge c = 7°$.

1) H. W. TALEN, Replacement of the halogen atom or the alkyl group in 1-chloro-, 1-methoxy- or 1-ethoxy-2 : 4-dinitro- and 2 : 4 : 5-trinitronaphthalenes by various other groups, Rec. d. Trav. Chim. d. Pays-Bas, T. **47**, no. 2, 346—362 (1928).

Pleochroism strong: $n_\alpha = n_\beta$ = brownish yellow, n_γ = greenish yellow.

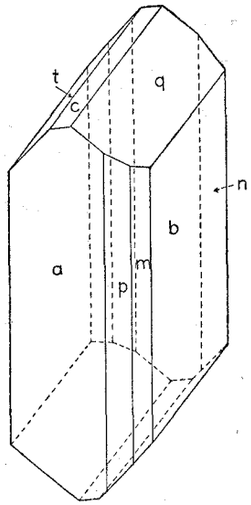

Fig. 1.

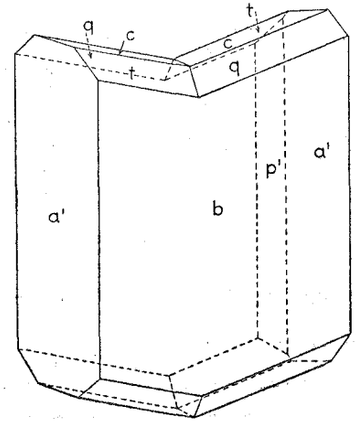

Fig. 2.

According to BARKER's [2]) classification of crystals the following characteristic angles have been calculated:

cr = 30° 36′	**am = 44° 02′**	bq = 51° 18′
ra = 46° 26′	mb = 50° 26′	qc = 29° 30′

Geological Institute of the University of Amsterdam.

[2]) T. V. BARKER, Systematic crystallography, an essay on crystal description, classification and identification, London (1930). — P. TERPSTRA, Kristallometrie, Groningen (1946).

Crystallography. — *Crystal description of 1-n-butylamino-2 : 4-dinitronaphthalene,* $C_{10}H_5(NO_2)_2NH \cdot C_4H_9(n)$. By L. P. G. KONING. (Communicated by Prof. H. A. BROUWER.)

(Communicated at the meeting of September 27, 1947.)

The organic compound 1-n-butylamino-2 : 4-dinitronaphthalene, $C_{10}H_5(NO_2)_2NH \cdot C_4H_9(n)$, prepared by H. W. TALEN [1]) has been kindly put at my disposal by Prof. Dr P. TERPSTRA of the Crystallographic Institute

[1]) H. W. TALEN, Replacement of the halogen atom or the alkyl group in 1-chloro-, 1-methoxy-, or 1-ethoxy-2 : 4-dinitro- and 2 : 4 : 5-trinitronaphthalenes by various other groups, Rec. d. Trav. Chim. d. Pays-Bas, T. **47**, no. 2, 346—362 (1928).

of the University of Groningen for crystallographic investigation with the two-circle goniometer, the results of which will be given here.

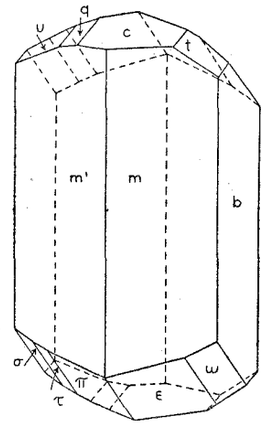

Fig. 1.

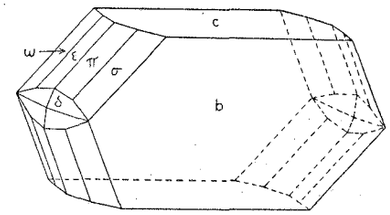

Fig. 2.

The orange-coloured crystal with a size of 0.1—1.0 mm are prismatic parallel to the c-axis and flattened parallel to b(010).

Cleavage b(010) perfect.

Monoclinic prismatic.

Forms: c(001), b(010), m(110), q($0\bar{1}1$), t(031), u($0\bar{2}1$), $\omega(\bar{1}31)$, $\varepsilon(\bar{1}21)$, $\pi(\bar{1}21)$, $\tau(\bar{2}52)$, $\sigma(\bar{1}31)$, $\delta(\bar{3}31)$.

Face	Symbol	φ	ϱ
1 c	(001)	90°	12° 02′
2 b	(010)	0	90
3 m	(110)	73 30′	90
4 q	($0\bar{1}1$)	138 13	17 51
5 t	(031)	16 31	36 51
6 u	($0\bar{2}1$)	155 55	27 24
7 ω	($\bar{1}31$)	320 14	42 44
8 ε	($\bar{1}21$)	308 42	37 25
9 π	($\bar{1}\bar{2}1$)	231 18	37 25
10 τ	($\bar{2}52$)	224 51	40 08
11 σ	($\bar{1}31$)	219 47	42 47

$X'_0 = 0.2132$ $\quad \varrho_0 = 12° 02'$ $\quad p'_0 = 0.8074$

$Y'_0 = 0$ $\quad \varphi_0 = 90°$ $\quad q'_0 = 0.2384$

$\beta = 102° 02'$ $\quad a = 0.3019$

$\mu = 77° 58'$ $\quad b = 1$

$c = 0.2384$

$d = 76° 35'$

$f = 44° 25'$