radiation. No absorption corrections were made in either case, and systematic errors due to absorption are not identical. In the CFV case no correction was made for anomalous dispersion by the nickel atoms while in the MS case this anomalous dispersion was taken into account.

Owing to the above differences one might expect appreciable variations in the two sets of parameters, but rather one finds remarkably good agreement in all parameters except the thermal parameters of the nickel atom. It is possible that the larger magnitude of vibration of the nickel atom found by CFV results from the failure to correct for anomalous dispersion. Using copper radiation the anomalous dispersion correction for the nickel atom is rather large and negative. Although the two sets of positional parameters are, within experimental error, in agreement with each other, a consideration of each set of parameters individually leads to contradictory conclusions concerning the asymmetry of the ligand. For example, the two independent C–N distances appear to be significantly different using the CFV parameters but appear to be identical using the MS parameters. Finally it should be pointed out that according to criteria soon to be published by Hamilton & Ibers (Hamilton, 1967), the intermolecular O(1)···C(1) and O(1)···C(2) distances do not indicate significant C–H···O hydrogen bonds.

References

BIAGAS, W. M. (1959). *Dissert. Abst.* **19**, 2781.
CALLERI, M., FERRARIS, G. & VITERBO, D. (1967). *Acta Cryst.* **22**, 468.
GODYCKI, L. E. & RUNDLE, R. E. (1953). *Acta Cryst.* **6**, 487.
HAMILTON, W. C. (1967). Private communication.
RUNDLE, R. E. & BANKS, C. V. (1963). *J. Phys. Chem.* **67**, 508.

Acta Cryst. (1967). **23**, 669

Space group and unit cell of diglycine strontium chloride trihydrate and diglycine calcium chloride tetrahydrate.

By K. JAYALAKSHMI and M. VIJAYAN, *Department of Physics, Indian Institute of Science, Bangalore* 12, *India*

(*Received* 8 *May* 1967)

Diglycine strontium chloride trihydrate, $(NH_2CH_2COOH)_2.SrCl_2.3H_2O$,crystallizes in the orthorhombic space group *Pbcn* with unit-cell dimensions $a=16{\cdot}00$, $b=9{\cdot}26$, $c=8{\cdot}25$ Å and $Z=4$. The crystals of diglycine calcium chloride tetrahydrate, $(NH_2CH_2COOH)_2.CaCl_2.4H_2O$, are monoclinic, space group $P2_1/c$, with unit-cell dimensions $a=13{\cdot}01$, $b=6{\cdot}794$, $c=15{\cdot}375$ Å, $\beta=91°24'$ and $Z=4$.

The work reported here forms part of a programme undertaken in this department to investigate the structure and properties of some addition compounds of glycine, in order to elucidate the structure of glycine in different states of aggregation and also to study the hydrogen bonds that stabilize these compounds (Krishnan & Narayanan, 1963; Krishnan & Balasubramanian, 1964; Easwaran, 1966*a*, *b*; Vijayan, 1966).

Crystals of diglycine strontium chloride trihydrate, $(NH_2CH_2COOH)_2.SrCl_2.3H_2O$, and diglycine calcium chloride tetrahydrate, $(NH_2CH_2COOH)_2.CaCl_2.4H_2O$, were grown by slow evaporation at room temperature of an aqueous solution of the components in stoichiometric proportions. Unit-cell dimensions were determined from oscillation and Weissenberg photographs taken about crystallographic axes with copper radiation. From systematic absences the strontium and calcium compounds were assigned to space groups *Pbcn* and $P2_1/c$ respectively. The densities of the samples were measured by flotation in a mixture of bromoform and carbon tetrachloride. The crystal data of the two compounds are given in Table 1.

The authors are grateful to Prof. R.S. Krishnan for his kind interest and encouragement and to Mr G.M. Venkatesh for supplying the material used in this investigation. One of the authors (M.V.) thanks the Council of Scientific and Industrial Research for the award of a Senior Research Fellowship.

References

EASWARAN, K. R. K. (1966*a*). *J. Phys. Soc. Japan*, **21**, 61.
EASWARAN, K. R. K. (1966*b*). *J. Phys. Soc. Japan*, **21**, 1614.
KRISHNAN, R. S. & BALASUBRAMANIAN, K. (1964). *Proc. Indian Acad. Sci.* **59A**, 14.
KRISHNAN, R. S. & NARAYANAN, P. S. (1963). *Crystallography and Crystal Perfection.* London: Academic Press.
VIJAYAN, M. (1966). *Indian J. Pure Appl. Physics*, **4**, no.6, 251.

Table 1. *Crystal data for* $(NH_2CH_2COOH)_2.SrCl_2.3H_2O$ *and* $(NH_2CH_2COOH)_2.CaCl_2.4H_2O$

	$(NH_2CH_2COOH)_2.SrCl_2.3H_2O$	$(NH_2CH_2COOH)_2.CaCl_2.4H_2O$
a	$16{\cdot}00\pm0{\cdot}02$ Å	$13{\cdot}01\pm0{\cdot}01$ Å
b	$9{\cdot}26\pm0{\cdot}02$	$6{\cdot}794\pm0{\cdot}01$
c	$8{\cdot}25\pm0{\cdot}01$	$15{\cdot}375\pm0{\cdot}01$
β	—	$91°24'\pm30'$
V	1222·32 Å^3	1358·57 Å^3
M	362·7	333·2
D_m	1·982 g.cm^{-3}	1·630 g.cm^{-3}
D_x	1·971 g.cm^{-3}	1·629 g.cm^{-3}
Z	4	4
μ	110·35 cm^{-1}	77·89 cm^{-1}