significantly simplify and shorten electron diffraction articles, while improving readability. These marks are also very helpful, we have found, in the course of the work itself.

TABLE II

EXPLANATION OF CRITICAL MARKS OF FIG. 1

Curve	Mark	Meaning
A	Dot	Creation operator: inner slope should be more convex upwards
B	Arrows	Positions (q_{obsd}) of rings as measured on photographs, adjusted by multiplication by q_{calcd}/q_{obsd}. Best curve
C	Dot circle	Circle is destruction operator: 5 max. too far up to the right
C	Line	Indicates desired levels: 9 min. too deep; 10 min. too shallow
C	Arrow	Duplicated from best curve: 9 max. significantly misplaced relative to adjacent features
C	Terminated line	Indicates desired width: feature too narrow
D	Curved line	Indicates desired levels: 8 min. too shallow *re* 5 min. and 9 min.
E	Line (short)	Feature, bottom of 8 min., too symmetrical; should tip, and lie closer to 8 max. than to 7 max.
E	Cross	Completely unacceptable feature; *cf.* standards (best curve and visual)
F	Lines	7 max. too high *re* 6 max.; 11 max. too high *re* 12 max.; 13 max. should lie between minima of almost equal depth
K	Curved lines	6 max. too high *re* 4 max. and 7 max.; depth of 8 min. about right *re* 5 min. and 9 min.
K	Line	Region should slope upwards more gently

A more complete presentation of the structure determination is available.[5]

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[5] W. F. Sheehan, Jr., Thesis, California Institute of Technology (1952).

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X-Ray Diffraction Patterns of Cuprous Acetate and Cupric Oxyacetate

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RECEIVED MARCH 27, 1952

In the course of some experiments on catalytic hydrogenation, it became desirable to prepare and to obtain the X-ray diffraction patterns of cuprous acetate, $CuOOCCH_3$, and anhydrous cupric oxyacetate, $Cu_2O(OOCCH_3)_2$. Cuprous acetate was prepared by Calvin's procedure[1]; the method involves solution of cuprous oxide in acetic acid–acetic anhydride, filtration of the hot solution, cooling, and filtration of the separated cuprous acetate, all in the absence of air or moisture. The cuprous acetate was pure white; it contained 50.9% Cu (theor. for $CuOOCCH_3$, 51.8% Cu).

THE *d/n* VALUES AND INTENSITIES OBTAINED FROM DEBYE–SCHERRER X-RAY PHOTOGRAPHS OF THIS MATERIAL

d/n	*I*	*d/n*	*I*	*d/n*	*I*
11.0	vw	2.48	s	1.67	w
10.0	vvs	2.42	s	1.63	vw
5.4	vvw	2.31	s	1.57	w
5.0	vw	2.25	vw	1.55	w
4.05	w	2.15	w	1.50	vw
3.69	vw	2.00	w	1.465	vw
3.50	vw	1.95	w	1.405	vw
3.15	vvs	1.89	vw	1.32	vvw
3.01	vs	1.81	w		
2.62	s	1.72	w		

The unit cell parameters obtained by Hull[2] for a compound listed as "cuprous acetate monohydrate" apply to cupric acetate monohydrate; calculated interplanar spacings, d_{hkl}, from Hull's data agreed within experimental error with the *d/n* values obtained from the diffraction pattern of the cupric salt.

Attempts to prepare cupric oxyacetate by oxidation of a quinoline solution of cuprous acetate failed because of a catalyzed oxidation of the quinoline. It was found possible, however, to prepare the anhydrous oxyacetate by oxidation of dry cuprous acetate; at 100°, the oxygen absorption is stoichiometric. On prolonged heating at higher temperatures (150–200°), the oxyacetate decomposes, with the production of metallic copper. Cupric oxyacetate is dark bluish-green in color. Microscopic examination of the samples prepared showed the crystals to be acicular or prismatic and possibly of equidimensional cross-section. The crystals were too small for interference observations, but the presence of birefringence indicates that the material is not cubic. Bjorstrum charts for tetragonal and hexagonal crystals were prepared for comparison with the observed X-ray diffraction lines obtained from the oxyacetate. As the following table indicates, a possible fit was found in the tetragonal system with $c/a = 1.35$, $c = 16.26$ Å., $a = 12.04$ Å.

I, obsd.	*d/n*, obsd.	*d*, calcd.	*hkl*
vvs	12.0	12.04	100
s	8.0	8.13	002
s	7.4	7.55	111
ms	6.0	6.02	200
vvw	5.4	5.42	003
vvw	5.0	5.10	211
s	3.75	3.78	222
vvvw	3.35	3.37	204
vvvw	3.00	3.01	400
vvw	2.71	2.71	006
m	2.46	2.47	206
w	2.14	2.14	335
w	2.09	2.10	424
vvw	1.89	1.89	444
vvw	1.85	1.85	622
vvw	1.80	1.80	604
vvvw	1.505	1.505	800
vvvw	1.280		

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[1] M. Calvin, THIS JOURNAL, **61**, 2230 (1939).

[2] R. B. Hull, University of Pittsburgh Bulletin, **35**, 142 (1938).