acid seems to be the most satisfactory of any of the last electrolytes tried. At 50° there was no oxide on the anode, and the deposit did not become spongy at as low a voltage as in the other cases.

	Electrolyte.		Current.		Temp. Centi-		
No.	Reagent.	Amount.	Ampere.	Volts.	grade.	Anode deposit.	Cathode deposit.
1	H_2SO_4	1–10 cc.			25°	Oxide each time	Coarse, crystallin
2	H_2SO_4 + Glycerol	10 cc. + 1 cc.	0.05	1.3	25°	None	Coarse, crystallin
3	Same	Same	0.07	1.5	25°	None	Spongy
4	NH_4CNS	5 g.	0.05	1.1	25°	Sulphur	Black
5	NaOH + NH_4OH	2 cc. + 4 cc.	0.04	1.1	25°	None	Coarse, crystallin
6	Same	Same	0.08	1.6	25°	None	Spongy
7	NH_4OH + $HClO_4$	4 cc. + 3 cc.	0.05	1.2	25°	Oxide	
8	Same	4 cc. + 4 cc.	0.04	1.1	25°	None	Crystallin
9	Same	4 cc. + 4 cc.	0.08	1.7	25°	None	Spongy
10	K_2F_2	1–5 g.			25°	Oxide each time	Coarse, crystallin
11	H_2SiF_6	5 cc.	0.08	1.3	25°	Oxide	Coarse, crystallin
12	H_2SiF_6	5 cc.	0.1	1.4	50°		Good
13	H_2SiF_6	5 cc.	0.2	1.7	50°		Spongy

Summary.

1. The general characteristics are described of the silver deposits from a variety of electrolytes.

2. With all the electrolytes tried except cyanide there is a point at about 1.4 volts beyond which, with the conditions here used, spongy deposits will result. With cyanide this point is much higher.

3. Satisfactory conditions have been tabulated for the quantitative precipitation of silver from several electrolytes.

4. Several other electrolytes have been tried which seem worthy of further investigation.

COLUMBUS, OHIO.

RATE OF HYDRATION OF PYROPHOSPHORIC ACID. A CORRECTION.

BY G. A. ABBOTT.

Through the kindness of Dr. J. M. Bell, of the University of North Carolina, my attention has recently been called to the fact that the experimental data given in Table IV of my article on the Rate of Hydration of Pyrophosphoric Acid[1] are not consistent with the statement in the text that the specific conductance of a mixture of the pyro and ortho acids is a linear function of its composition. Through a regrettable error

[1] THIS JOURNAL, 31, 766 (1909).

in copying, the wrong data were included in the table referred to, and it is the purpose of this note to present the correct ones. The following table should be substituted for that given in the article:

TABLE IV.—SPECIFIC CONDUCTANCE (L) × 10^6 OF MIXTURES OF PYRO- AND ORTHOPHOSPHORIC ACIDS AT 18°.

At. wts. P per liter.	Per cent. P as ortho acid. / Per cent. P as pyro acid.	100 / 0	75 / 25	50 / 50	25 / 75	0 / 100
0.1	Found.....	9650	11640	13650	15610	17690
	Calculated.....	....	11660	13670	15680	....
0.05	Found.....	6135	6992	7874	8726	9622
	Calculated.....	....	7007	7878	8750	....
0.01	Found.....	2030	2154	2275	2388	2517
	Calculated.....	....	2152	2274	2395	....

The degree of the divergence from a linear relation between conductance and composition will be seen by comparing the found values with the calculated ones given in the rows just beneath them. These calculated values were obtained by the expression $xL_o + (1 - x)L_p$, where x represents the fraction of the phosphorus present in the mixture as ortho acid, L_o the conductance of the pure ortho acid, and L_p that of the pure pyro acid. It will be seen that the difference is largest in the case of the mixtures with ·25 per cent. ortho acid, but that even in this case it averages only about 0.4 per cent.

This opportunity may be also utilized for correcting the following typographical errors in the article on The Ionization Relations of Ortho- and Pyrophosphoric Acids and their Sodium Salts, by Abbott and Bray:[1]

On page 742, line 19, insert K_B in the denominator of the expression for K_3.

On page 751, line 14, read 353.8 instead of 358.8.

On page 751, last two lines, read K'_1, for K'_2 and K'_2 for K'_1.

On page 753, in Fig. 2, read $Na_4P_2O_7$ in place of $Na_4P_4O_3$.

On page 762, in Table XXIII, read $H_2PO_4^-$ in place of HPO_4^- and $H_3P_2O_7^-$ in place of $HP_2O_7^-$.

UNIV. OF NORTH DAKOTA, Oct., 1910.

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF HARVARD UNIVERSITY.]

A REVISION OF THE ATOMIC WEIGHT OF CALCIUM. I. ANALYSIS OF CALCIUM BROMIDE.

BY THEODORE W. RICHARDS AND OTTO HÖNIGSCHMID.

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Introduction.

During the last fifty years the atomic weight of calcium has been repeatedly investigated, but most of the investigations have not led to

[1] THIS JOURNAL, 31, 729 (1909).