

sample. In such cases it is more difficult to get an average sample than when the chips are fine and regular.

LOSS OF GOLD AND SILVER DURING SCORIFICATION ASSAY.

BY W. P. MASON AND J. W. BOWMAN.

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NO explanation of the following numerical results is required, beyond stating that the losses referred to represent total losses, that is to say, losses due to both volatilization and mechanical causes. The furnaces employed were "Battersea No. F," and the conditions under which the assays were made, such as heat of muffle, draught in muffle, and manipulations in general, were such as would obtain in careful practical work.

SILVER.				GOLD.			
Weight before cupelling.	Weight after cupelling.	Loss.	Per cent.	Weight before cupelling.	Weight after cupelling.	Loss.	Per cent.
210.765	206.360	4.405	2.09	338.030	335.025	3.005	0.888
543.165	535.645	7.52	1.38	349.020	348.200	0.820	0.234
206.360	200.325	6.035	2.92	335.025	334.365	0.660	0.197
535.645	523.330	12.315	2.29	348.200	346.900	1.30	0.373
200.325	196.720	3.905	1.79	334.365	333.120	1.245	0.372
523.330	514.765	8.565	1.63	346.900	345.790	1.11	0.319
196.720	191.733	4.987	2.53	332.575	331.725	0.85	0.255
514.765	503.950	10.815	2.10	345.790	344.15	1.64	0.474
191.733	187.820	3.913	2.03	331.725	330.600	1.125	0.338
434.180	424.925	9.255	2.13	344.965	344.265	0.70	0.202
187.820	184.525	3.295	1.80	330.600	329.900	0.70	0.211
424.925	419.975	4.95	0.95	334.650	343.960	0.69	0.206
184.525	180.560	3.965	2.14	329.900	329.130	0.77	0.233
419.975	410.430	9.545	2.27	220.635	220.200	0.435	0.197
410.430	403.365	7.075	1.72	329.130	328.860	0.27	0.082
403.365	394.550	8.815	2.18	220.200	219.835	0.365	0.165
Average loss..... 1.99 per cent.				Average loss..... 0.296 per cent.			
" " entire process.. 2.54 " "				" " entire process 0.87 " "			
" " by cupellation.. 1.99 " "				" " by cupellation 0.296 " "			
" " in scorification. 0.55 " "				" " in scorification 0.574 " "			

SILVER.				GOLD.			
Weight before scorifying and cupelling.	Weight after scorifying and cupelling.	Loss.	Per cent.	Weight before scorifying and cupelling.	Weight after scorifying and cupelling.	Loss.	Per cent.
466.850	453.200	13.65	2.92	357.750	351.982	5.768	1.61
480.052	469.575	10.477	2.18	388.525	382.565	5.960	1.53
455.00	434.365	20.635	4.53	353.782	346.234	7.548	2.10
471.375	456.475	14.9	3.16	384.365	382.033	2.332	0.60
436.165	425.780	10.385	2.38	348.034	346.325	1.709	0.49
458.275	448.818	9.457	2.06	385.833	381.875	3.958	0.51
427.580	418.533	9.057	2.11	348.125	346.485	1.640	0.48
652.350	641.520	10.83	1.66	478.120	471.920	6.2	1.29
354.200	344.520	9.68	2.73	348.235	346.250	1.985	0.57
643.320	628.175	15.155	2.35	473.720	471.225	2.495	0.52
346.320	340.500	5.82	1.68	348.05	346.465	1.585	0.45
614.920	600.565	14.355	2.33	356.425	352.435	3.99	1.11
342.300	333.075	9.225	2.69	348.265	345.535	2.73	0.78
602.365	592.200	10.165	1.68	354.235	352.525	1.71	0.48
334.875	327.140	7.735	2.30	347.335	345.500	1.835	0.44
594.000	581.465	12.535	2.11	354.325	352.075	2.25	0.63
328.84	317.83	11.01	3.37	347.600	344.135	3.465	0.99
567.62	555.365	12.255	2.15	353.875	350.925	2.95	0.83
219.450	210.765	8.685	3.95	221.635	219.25	2.385	1.07
557.165	543.165	14.000	2.51	352.725	349.02	3.705	1.05
Average percentage loss.....2.54 per cent.				Average percentage loss.... 0.87 per cent.			

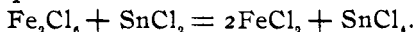
RENSSELAER POLYTECHNIC INSTITUTE,
1893.

ON THE SPEED OF REDUCTION OF FERRIC CHLORIDE BY STANNOUS CHLORIDE.

BY LOUIS KAHLENBERG.

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THE reaction that takes place when ferric chloride is treated with stannous chloride in aqueous solution is expressed by the following equation :



This reaction goes on slowly enough at ordinary temperatures to admit of study from the standpoint of chemical dynamics. It was my purpose to investigate whether the reaction proceeds