producing them I used the protochloride in place of the bichloride of mercury; and I may further state that the solution of this cyanogen kept persistently acid even when it was three weeks old and much of the gas decomposed; and, what is more singular still, the solution was far more solvent of gold at that time than just after it had been made. It was therefore apparent to me that it is not *any* degree of acidity in a cyanogen-solution that does, as is now supposed, conserve this gas—it is not a mild acidity that is always effective for this purpose. So I increased the acidity of the cyanogen-solution by adding to it a few drops of hydrochloric acid, and tried another gold test-paper therein, when I was unable to detect, even after the lapse of seven days, the slightest change of tint had been produced upon that test-paper. Hydrochloric acid had not any retarding effect upon the dissolution of gold in weak solutions of bromine.

"For supplementary and confirmative evidence on this point I next passed cyanogen gas through a weak solution of nitrate of silver to wash out any ammonia, hydrocyanic and hydrochloric acids contained therein, and the purified gas was then allowed contact with the gold test-paper both as gas and as aqueous solution of it, when I got results altogether confirmatory of those obtained in the previous experiment—that is, no perceivable effect was produced on the test-papers by seven days' contact. Subsequently I extended the time of contact to three months, but even then failed to discern any loss or change upon the gold.

"The results of these various experiments, taken collectively, appear to be positively overwhelming in favour of the correctness of the assertion I made before the Society last month—that aqueous solutions of free cyanogen have not the least solvent power upon gold; consequently they support the old contention of mine cited in the former paper, and alluded to here—that cyanogen does not, as is now generally supposed, compare with the haloids, chlorine, bromine, and iodine chemically—that, in fact, except that it appears to be a monad with these and a dozen or so more of the elements, it has no chemical relations to any of them.

"I should inform you that the gold I used for the experiments here detailed, also for those for my former paper to the Society, was practically pure; at least, it only contained minute traces of copper. Argentiferous gold, of which class most or all our native gold is, would, of course, if possible, be still less amenable to solutions of cyanogen than the gold I used, and for the reason that argentic cyanide, if formed at all, would always remain as a product quite insoluble in such cyanogen-solutions.

"That cyanogen would have very little tendency to form by its decomposition solvents for gold as used upon quartz, &c., at the gold-mines appears to me absolutely certain, as both air and water are generally acidic, and all the reef-quartz I have tested also gives an acidic reaction."

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