strate the immortality of the soul within a year,' that it is due to the facts bearing upon the choice between materialism and spiritism to say that I have never made any such professions as have been alleged. I wish to make this statement, because I shall leave no excuse in my report of my facts for judging of them from that point of view. Whether they have any value or not I do not care to say, as I am not the person to urge that view of them. I merely wish the scientific public that still has the bad habit of reading and believing the newspapers to know that I was careful to deny that I made any such pretensions as were so generally attributed to me. More than one-half the interviews alleged to have been held with me were the fabrications of reporters who never saw me, and the other half omitted what I did say and published what I did not say. There would be no reason to make this correction at all except that the wide currency given to a pretension that I never entertained creates a standard by which I am far from estimating the facts myself, and much less can I expect others to treat it with respect. It is true that I have reversed my preferences in the choice between spiritism and materialism on account of ten years study of the Piper case, but I have done so on grounds that must force respect, even when they do not produce conviction; and the only object I had in facing public scorn was to make it as respectable to study these phenomena as it is to investigate insanity and other abnormal facts. There is a perfectly inexcusable cowardice in the attitude of scientific men toward the claims of spiritualism, and they are treated with a contempt which men would be ashamed to exhibit toward the phenomena of insanity. Hence having a body of facts for which I can safely demand consideration on some theory, I have only thrown down the gauntlet to those who have not accepted telepathy and simply ask that they turn the balance in favor of that hypothesis, instead of the spiritistic for which I have merely declared a preference, but which I should be the first to surrender, if science establishes a preference for the infinite in a woman's skull. But what I shall have to report must not be estimated as an attempt to demonstrate anything even to myself, to say nothing of those who have neither studied the subject nor taken the pains to question the authority of respectability.

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NOTES ON ORGANIC CHEMISTRY.

In the usual methods of quantitative analysis by electrolysis, the cathode is usually a platinum cone or cylinder, giving greater current on the exterior than in the interior, and an unequal deposition of the metallic deposit. In Oettel's improvement a platinum plate is used as cathode, with a fork-shaped anode, one arm on each side of the cathode. This is only partially successful in overcoming the difficulties, the deposit tending especially to scale off. In the *Berichte*, Clemens Winkler suggests the use of platinum gauze as a kathode. The metal is deposited very regularly even with strong current. It is in the form of a cylinder around each thread of gauze, is compact, firmly deposited, and shows no tendency to scale off, even at very considerable current strength. The time required is only about one-fourth as great as with the old form of electrode. Many solutions are therefore available which could not otherwise be used, as, for example, copper is readily deposited in large quantities from its sulfate solution.

In the last number of the *Bulletin* of the French Chemical Society, Weisberg gives a large series of experiments as to the power of aqueous solutions of sugar to dissolve lime. The amount which can be thus dissolved is about 27 grams of lime per 100 grams of dissolved sugar. In solution with very little sugar the relative amount of lime taken up is larger than this, but the absolute amount is of course small. Previous observations are confirmed that lime in its anhydrous form, CaO, is more soluble in sugar solutions than is its form of calcium hydroxide or milk of lime.

Some time since the use of calcium carbid as a reducing substance for high temperatures was suggested by Warren. This subject has now been worked up by Tarrugi in the *Gazetta*, and he finds most metallic salts are decomposed

with great ease with the formation of calcium alloys, and, in a few cases, of the free metal. As this is the case with chromium, it may be possible to devise a commercial method for its manufacture by the use of calcium carbid.

SOME years ago the sterilization of water by chlorid of lime (bleaching powder) was suggested by Traube, and the subject was further studied by Bassenge. In a recent number of the *Hygienische Rundschau*, A. Lode, of Innsbruck, describes further experiments along the same line. The process, as practically carried out, demands 0.15 gram of commercial, dry chlorid of lime per liter of water to be purified. This is rubbed with an equal weight of water in a porcelain dish, or on a large scale in a suitable wooden or stone vessel, to a thin paste, and added with constant agitation to the water. The corresponding amount of hydrochloric acid, for which the author gives a table, is then added. In the course of half an hour the water has cleared and 0.3 grams of sodium sulfite per liter is added. The cost of the process is found to be about 8 cents per cubic meter of water. It is claimed that by this process the water is completely sterilized, and even very bad waters rendered potable.

J. L. H.

THE NOVEMBER METEORS OF 1899.

PROFESSOR E. C. PICKERING has sent from the Harvard College Observatory the following account of the approaching meteoric shower:

The predicted time of maximum of the November meteors is November 15, 1899, at 18 h. Greenwich mean time. As a similar shower may not occur again for thirty years, no pains should be spared to secure the best possible observations. The most useful observations that can be made by amateurs are those which will serve to determine the number of meteors visible per hour throughout the entire duration of the shower. They should be made on November 15th, and also on the two preceding and following evenings. The most important time for observation is from midnight until dawn, as comparatively few meteors are expected earlier. Observations are particularly needed at hours when they cannot be made at the observatories of Europe and America. In general, the time required for ten or more meteors to appear in the region covered by the accompanying map, should be recorded. This observation should be repeated every hour or half hour. If the meteors are too numerous to count all those appearing upon the map, the observer should confine his attention exclusively to some small region, such as that included between the stars μ Ursae Majoris, 40 Lyncis, δ and α Leonis. If the meteors occur but seldom, one every five minutes, for instance, the time and class of each meteor should be recorded. Also note the time during which the sky was watched and no meteors seen, and the time during which that portion of the sky was obscured by clouds. Passing clouds or haze, during the time of observation should also be recorded. The date should be the astronomical day, beginning at noon, that is, the date of early morning observations should be that of the preceding evening. Specify what time is used, as Greenwich, standard, or local time. When a meteor bursts, make a second observation of its light and color, and when it leaves a trail, record the motion of the latter by charting the neighboring stars, and sketching its position among them at short intervals until it disappears, noting the time of each observation. If the path of a meteor is surely curved, record it carefully upon the map.

On November 14, 1898, thirty-four photographs were obtained of eleven different meteors. Their discussion has led to results of unexpected value. The greatest number of meteors photographed by one instrument was five. Only two meteors were photographed which passed outside of the region covered by the map, although the total region covered was three or four times as great. No meteors fainter than the second magnitude were photographed.

Photographs may be taken, first, by leaving the camera at rest, when the image of the stars will trail over the plate and appear as lines, or secondly, attaching the camera to an equatorial telescope moved by clockwork, when a chart of the sky will be formed, in which the stars will appear as points. A rapid-rectilinear lens is to be preferred in the first case, a wide-angle lens in the second. The full aperture should be used and as large a plate as can be covered.