LETTERS TO THE EDITOR

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Metargon and the Interplanetary Medium.

THE detection of metargon, and the statement that its spectrum, at all events, closely agrees with the Swan-spectrum, seems to possess a very great interest for the physics of our solar system. It gives a new and expected support to the assumption of an interplanetary atmosphere, which, as I shortly hope to show, will enable us to indicate the solution of most problems relating to the comets, and probably, also, to the sun.

This medium, which gives the acetylene-bands together with the cyan-bands, is already known through different observations :—

(1) In the absorption spectrum of the sun.

(2) In the emission spectrum of the highest beams of the corona (Tacchini).

(3) In the spectra of *all* comets, traversing all parts of the interplanetarian space.

(4) In the occluded gases of meteorites.

(5) Now, at last, as a constituent of the atmosphere of the earth.

The last observation completes the foregoing series, so that we can say that this medium now is found everywhere ; as we should expect to find it, if it really forms a common atmosphere to our planetary system. J. R. RYDBERG.

Lund, July 21.

Metargon.

PROF. SCHUSTER in his last communication on "The Spectrum of Metargon" says, "taking the spectroscopic evidence by itself, it points in the direction that the gas under examination is a compound of carbon either with argon or with a so far unknown body."

This observation has reference to the gas obtained by the volatilisation of a "white solid," amounting to about 1 per cent , which separates during the liquefaction of argon, as stated by Prof. Ramsay and Mr. Travers in their Royal Society papers on the "Companions of Argon." "The argon separated is a liquid, but at the same time a considerable quantity of solid was observed to separate partially round the sides of the tube, and partially below the surface of the liquid." Further, "inasmuch as the gas differs very markedly from argon in its spectrum and in its behaviour at low temperatures, it must be regarded as a distinct elementary substance, and we therefore propose for it the name 'metargon' It would appear to hold the position towards argon that nickel does to cobalt, having approximately the same atomic weight yet different properties." Now, a year ago Lord Rayleigh was kind enough to allow me the use of a sample of pure argon for the purposes of liquefaction. The gas, amounting to about 250 cc., was enclosed in a sealed bulb to which was attached a narrow quill tube for easy condensation in liquid air. I have repeatedly liquefied this sample, and have always obtained a perfectly clear fluid argon free from turbidity, opalescence, or any solid matter. In previous papers I have shown that a very small fraction of a per cent of gaseous impurity, which separates as a solid in the presence of a liquid, can be detected in this way. Thus 0·04 per cent. of carbonic acid in dry air gives an opalescent liquid when similarly treated, and the same thing occurs with oxygen containing less than 0·1 per cent. of chlorine. It would, indeed, be strange if anything like 1 per cent. of a gas giving a white solid at the temperature of liquid air could under similar circumstances escape detection if present in Lord Rayleigh's sample of argon. The question, then, is, Where can the metargon of Prof. Ramsay and Mr. Travers be? JAMES DEWAR.

Royal Institution, August 1.

Liquid Hydrogen.

IN a previous letter I said Mr. Hampson's "*attempt to justify going behind my back in his relations with a member of the staff of the Royal Institution is a too transparent subterfuge to require further comment*," and if I had not reason to feel the necessity of the use of cautious language when using your columns, I should have employed even stronger condemnatory terms.

Considering Mr. Hampson was not seeking from the Royal Institution some general scientific information, but experimental help to improve upon methods of research in which I was actually engaged, and to which my assistant must necessarily be privy, his proceedings were utterly indefensible.

Now Mr. Hampson *tries on a further justification* by pointing to the position of the person who introduced him to the "member of the staff." When Mr. Hampson gives the name of the "senior partner," I will be in a position to judge whether that gentleman's acquaintance with me was such as to fairly warrant him in transferring the introduction to the professor.

In the meantime the question remains, Why did Mr. Hampson, like other persons of University standing desirous of special knowledge or help in the possession of the Royal Institution Chemical Department, not address me in a manly way and request an interview ? If he could not write, then why did he not call and send up his card ? Why this pretended necessity for an introduction from a superior person of "familiar acquaintance" as a preliminary to a "confident hope of gaining" my "attention directly" ? Yet this punctilious gentleman suggests in extenuation that he entertained the possibility of a "*chance meeting*" with me here. How considerate of my position ! The course of action Mr. Hampson succeeded in carrying out was admirably adapted to create antagonism between the professor and his assistant.

Mr. Hampson now says : "It is strange Prof. Dewar, having himself published his belief that his assistant is capable of being 'got at' by a complete stranger, should in the very next line attach some importance to that gentleman's account of the transaction." This is, in other words, a covert suggestion that my assistant's veracity is not comparable with his own. Had my assistant ever dreamt that what I regard as a far too precipitate kindness to a "complete stranger" would ultimately be used as material to support an attack upon the character of the professor and the credit of this Institution, I do not doubt for a moment he would have acted with more dignified reserve and cautious consideration ; in spite of Mr. Hampson's persuasive influence and the tempting allurement of the introduction from the "senior partner of a large chemical firm in London of the highest standing."

Verily no man can serve two masters at any time, far less when both are engaged on the same research. If conduct like this, which Mr. Hampson has the boldness to characterise as "simple and straightforward," is to be tolerated, the inviolate relations between professor and assistant are ruined, and there is, indeed, an end to any combination of science and morals.

Royal Institution, July 31. JAMES DEWAR.

The Medusa of Lake Urumiah.

I HAVE received to-day a telegram from my son, Mr. R. T. Günther, posted this morning at Tauris, in which he states that the "Medusa" reported by travellers to inhabit in immense numbers Lake Urumiah, proves to be a species of *Branchipus*.

Kew, July 27. ALBERT GÜNTHER.

Distillery Pollution.

THE disposal of the effluents from distilleries and other works is a matter of first interest not only to the proprietors of the works, but also to the riparian owners on the banks of streams on which such works are usually situated, and a few remarks on the possibility of avoiding the Law Courts in matters of pollution of rivers may be of interest, especially to the owners of distilleries. In the Spey district of Scotland, for instance, the great increase of distilleries, both in number and in malting capacity, has in recent years so increased the effluent that although any one distillery may not in itself seriously pollute so large a body of water as the Spey, yet their joint effluent is so great, it is alleged, that the pollution is serious, prejudicially affecting fish life, spawning and the taking of the fly by salmon, and rendering the river otherwise unfit for primary uses. Be these allegations true or false, the fact remains that at the present moment interdict hangs over one distillery—the Macallan Glenlivet Distillery—and if no method is found of avoiding the discharge and consequent fungoid growth, &c., there is no saying what may be the issue and ultimate result to what is now a