companying such work. Five years went by when publications of accounts of experiments eminently successful, as carried out by R. R. Sayres, W. P. Yant and J. H. Hildebrand, of the Bureau of Mines, were described.

I then wrote Dr. McLennan, under date of July 31, 1925, as follows:

Dear Professor McLennan:

You will probably recall that on January 14, 1920, I wrote you in response to a request for suggestions as to possible uses for helium, and outlined a possible set of advantages which it might have in working under high pressures, as in caissons or deep sea work. This was about five years ago, or more. I now find that under Serial No. 2670, the Bureau of Mines sends out a report dated February 20, 1925, in which experiments have been made in the line of my suggestion, by R. R. Sayres, W. P. Yant and J. H. Hildebrand. This is somewhat surprising to me in face of the fact that I tried to get from the Bureau of Mines a supply of helium for just such an investigation, but without any success. It surprises me because there is not the least reference to where the idea originally came from, and I would ask you if you know whether the suggestion, as sent to you, was forwarded to the Bureau of Mines in a letter or otherwise.

Awaiting your reply, I am

Very truly yours,

(Signed) ELIHU THOMSON

P. S. As my first scientific paper of fifty years ago or more dealt with the "Inhalation of Gases and Mixtures of Gases," in which field I carried on quite a number of experiments, and which paper was published in the Philadelphia *Medical Times* of March 15, 1873, it is natural that I should have a decided interest in this matter, and that my attention should turn to the possibilities of helium in this connection when such gas was available.

E. T.

and sent the following to the Bureau of Mines:

July 31, 1925.

Dear Sir:

In looking over the report Serial No. 2670 just received, I would like to call attention to the fact that on January 14, 1920, and in answer to a request for suggestions as to the new uses for helium, I wrote Professor McLennan suggesting the helium-air mixture for caisson work. I also, at the same time, made application to the Bureau of Mines for helium and intended to carry out experiments of this kind if a supply was available.

It seems to me that under the circumstances some acknowledgment is due as to the priority in the suggestion of this helium-oxygen mixture, on which I am glad to see experiments have been carried out with such signal success.

Very truly yours,

(Signed) ELIHU THOMSON

Encs.

P. S. As my first scientific paper of fifty years ago or more dealt with the "Inhalation of Gases and Mixtures of Gases," in which field I carried on quite a number of experiments, and which paper was published in the Philadelphia *Medical Times* of March 15, 1873, it is natural that I should have a decided interest in this matter, and that my attention should turn to the possibilities of helium in this connection when such gas was available.

E. T.

To the former I received a gracious acknowledgment and statement that he had called attention to my suggestion in *Nature* some years before.

To the letter addressed to the Bureau of Mines nothing definite as an answer has been received though about a year and a half has passed by. From recent reports, however, we learn that the helium-oxygen mixture has been used for more extended or deeper diving than before and that the sunken submarine, S–51, was successfully brought to the surface by divers supplied with the helium-oxygen atmosphere.

The moral to be drawn from all this is: If you have a good idea, publish it at once, or patent it, or both, in which case it is not so easy for the other fellow coming along years later to adopt it without giving credit where credit is due.

ELIHU THOMSON

SWAMPSCOTT, MASSACHUSETTS

ABOUT THE ACCUSATION OF PLAGIARISM OF THE LATE DIRECTOR OF THE PULKOVO OBSERVATORY, OTTO STRUVE

IN the December number of the *Journal of the Royal Astronomical Society of Canada* there appeared a biographical article by Mr. A. F. Miller, entitled "Camille Flammarion, his Life and his Work," in which the author accuses the late director of the Pulkovo Observatory, Otto Struve, of intentionally assigning to himself another's discovery, the accusation being based on a suspicion once expressed by Flammarion. Messrs. George and Otto Struve published in the March, 1926, number of the same journal, an answer, in which they completely refuted the accusation on the basis of some documents available and fixed the true state of matters.

As Mr. Miller nevertheless persists in holding to his accusation (July-August issue of the *Journal of the Royal Astronomical Society of Canada*), the astronomers of the Pulkovo Observatory feel obliged to protest against such a dishonoring of their late

director, who was highly respected not only as a scientist, but also for his noble spirit.

As some readers may not be acquainted with the controversy, we will briefly recapitulate the state of matters.

Flammarion has mentioned in his "Catalogue des étoiles doubles," issued 1878, that he had discovered independently of O. Struve the irregular motion of the component C in the system of ζ Cancri, but explains it otherwise than Struve, who ascribes it to the influence of a fourth invisible body.

Some years later Flammarion gives in his popular book "Les étoiles et les curiosités du ciel" the following statement: that he had written to Otto Struve asking the latter to communicate his latest observations of ζ Cancri in order to complete the material available. Struve did not answer this letter, but sent some months later to the Paris Academy a paper, in which he assigns to himself the discovery of the irregular motion of the companion. C. Flammarion adds some ironical suggestions concerning singular coincidence of circumstances that he and Otto Struve simultaneously studied ζ Cancri, that they both applied the same method and that Struve made his discovery after receipt of Flammarion's letter.

Mr. Miller raises in his "Biography of Flammarion" this quite unfounded suspicion, and accuses Otto Struve of plagiarism and "dishonorable conduct."

The letter of Flammarion to Struve is still preserved and an authenticated copy of the letter of April 29, 1874, quoted by Flammarion, is at hand *in extenso.*

We can confirm all that has been said by Messrs. Georg and Otto Struve in their reply to Mr. Miller's attack, namely, that the letter as concerns ζ Cancri contains only a request to send new observations of this double star, about which Flammarion writes "c'est celui auquel je tiendrai le plus à cause de son importance comme système triple."

The discovery of an irregular motion is not even mentioned. Besides there was absolutely no need to call Struve's attention to ζ Cancri, as he had observed the star since 1840 and the great leaps in the observations of this component had been indicated in 1855 by Winnecke in the *Astronomische Nachrichten.*

Although Mr. Miller explains in his second note his assertion, Flammarion had communicated to Struve "full particulars" of his discovery, expressed in the December issue of the *Journal of the Royal Astronomical Society of Canada,* by a mistake of his secretary, he seeks to find in the words "il ne répondit pas" a proof of dishonorable behavior by Otto Struve.

We find quite insignificant the fact that Flammarion did not receive an answer to his letter of April 29, 1874, but it may be by an omission on the part of Otto Struve, quite excusable owing to the extent of his correspondence, or by some possible neglect in the post.

Furthermore there is no reason to think that Struve intentionally kept secret his latest observations, as in the same letter Flammarion thanks Struve for the communication of observations of ζ Cancri.

We do not examine here to what extent Flammarion was right in concealing from Otto Struve the results of his own studies of ζ Cancri, while the latter obligingly put at the disposal of Flammarion his unpublished observations of this star.

After the contents of the letter of April 29 became known, there is no more need for further testimony to the fact that Flammarion did not inform Otto Struve of his discovery; thus the suspicion of plagiarism, of which a hint is given by Flammarion himself and which is so categorically expressed by Mr. Miller, has no foundation in fact.

A. A. IVANOFF,
Director of the Pulkovo Observatory
PULCOVO

THE DISSOLUTION OF INSULIN INTO TWO NEW ACTIVE SUBSTANCES

AT the scientific meeting of the State Institute of Hygiene in Warsaw on November 4, 1926, I read a paper on the separation from insulin of two extremely interesting new substances. This preliminary report can be amplified as follows:

From the insulin produced in our institute the clinical unit being 0.07 mg. by an extremely mild fractionation procedure, for the present two substances could be obtained in a crystalline state, which are being designated in the preliminary way as A and B.

The substance A is contained in the insulin in a larger proportion, the yield corresponding to over half of the initial insulin and unlike the usual insulin it decreases the blood sugar in 70 to 80 per cent. of normal rabbits, but having a high initial blood sugar it decreases the blood sugar by 10 to 44 per cent. Similarly in rabbits with low initial blood sugar it produces either no effect or causes increases from 5 to 20 per cent. This observation has led me to apply the substance clinically on diabetics and non-diabetics in conjunction with Dr. Marceli Landsberg, of Warsaw. From the small number of cases investigated it would be premature as yet to reach a definite conclusion, but so far we had increases of blood sugar or no effect in non-diabetics and marked decreases in diabetics.

As to the substance B it represents a new hormone of complicated and not easily understood action.