



Philosophical Magazine Series 3

ISSN: 1941-5966 (Print) 1941-5974 (Online) Journal homepage: <http://www.tandfonline.com/loi/tphm14>

Observations on creatine

M. Heintz

To cite this article: M. Heintz (1847) Observations on creatine, Philosophical Magazine Series 3, 31:207, 236-237, DOI: [10.1080/14786444708645835](https://doi.org/10.1080/14786444708645835)

To link to this article: <http://dx.doi.org/10.1080/14786444708645835>



Published online: 30 Apr 2009.



Submit your article to this journal [↗](#)



Article views: 2



View related articles [↗](#)

Full Terms & Conditions of access and use can be found at
<http://www.tandfonline.com/action/journalInformation?journalCode=tphm14>

mencement of a system of prevention by the removal of the causes of fever, you have in your own hands, and have had for some months, the sure and certain means of preventing the extension of fever to the immediate attendants on the sick.'

"In the columns of newspapers, in the pages of journals, on the covers of magazines, in the corners of railway guides, placarded on dead walls and bankrupts' shop-windows, dropped into the hat at public meetings, thrust into the hand in streets, and forced upon the attention at every turn, we thought all the modes of puffing quack advertisements and indecent labels, either in prose or rhyme, had been exhausted: but we find that we were mistaken. A novelty in this department has been introduced by Colonel Calvert; and in the pages of a parliamentary report* we see puffs as gross, and language as indelicate, as any that disfigure the lowest newspapers."

We can only add an expression of our regret that an important public cause, that of sanitary improvements, should have to encounter prejudices raised against it from the exaggerations, misrepresentations, quackery, and jobbing which are too manifest in the conduct of some of its advocates.

A GRANT OF 200*l.* TO MR. WILLIAM STURGEON.

We are glad to learn, from a communication dated Downing Street, 12th August, from Colonel Grey, the private secretary of Lord John Russell, that his Lordship has been pleased to grant the sum of 200*l.*, from the Royal Bounty Fund, to Mr. William Sturgeon of this town. Mr. Sturgeon was formerly lecturer on experimental philosophy at the Hon. East India Company's Military Academy, Addiscombe; and since his residence in Manchester, now extending over a number of years, he has been superintendent of the Victoria Gallery, delivering various courses of lectures there; and subsequently he filled the office of lecturer to the Manchester Institute of Natural and Experimental Science. For a long series of years Mr. Sturgeon has honourably distinguished himself by his investigations and discoveries in the various branches of electrical science, especially in electro-magnetism and thermo-electricity.

OBSERVATIONS ON CREATINE. BY M. HEINTZ.

About two years ago I described a peculiar substance which I had discovered in the normal urine of man. From subsequent investigations I find that this substance is identical with that which M. Chevreul found in meat broth, to which he gave the name of creatine, and the presence of which in the fresh muscular flesh of different animals has recently been shown by Liebig.

The most advantageous method of procuring the substance is that subsequently pointed out by M. Pettenkofer; it consists in adding

* That Parliamentary Reports are sometimes made vehicles of privileged detraction and calumny the public are already aware. A late instance with regard to the Greenwich Observatory has been exposed by the Astronomer Royal.

to the alcoholic extract of the urine an alcoholic solution of chloride of zinc; in a short time a deposit is formed, which contains the creatine in combination with the chloride of zinc, together with a small quantity of phosphate of zinc. These two substances are separated by boiling water, which dissolves the first, but is without action upon the latter. The pure creatine is obtained from the aqueous solution of its combination with chloride of zinc by precipitating the zinc with hydrosulphate of ammonia; after having evaporated the filtered liquid as far as possible without a precipitate being formed in the boiling solution, absolute alcohol is added to it, when the creatine is immediately deposited in the form of small crystals, resembling those obtained in operating upon the alcoholic solution of the aqueous extract of meat.

After having washed these crystals with alcohol, I recrystallized them from water. The elementary analysis of the pure crystals led to the following formula, $C^3 H^9 N^3 O^4 + 2HO$, which is the same as that advanced by M. Liebig.

When creatine enters into combination with chloride of zinc, it parts with 2 atoms of water besides the water of crystallization, and in exchange takes up 1 atom of this salt. This combination is represented by the following formula, $C^3 H^7 N^3 O^2 + ClZn$, and the atomic weight of creatine is consequently 1412.5.

From the experiments of M. Liebig it results, that of all the organs of the animal body it is only the muscles which yield creatine. Now, as I have proved its presence in the urine of man and animals, it appears placed beyond all doubt that this substance is formed in the muscles, that it is absorbed by the lymphatics or blood-vessels, and is finally secreted by the kidneys, like urea, &c. We may therefore conclude that creatine should henceforth be placed amongst the *excrementitious* substances; and consequently it is barely probable that it constitutes one of the most important alimentary principles of meat broth, as M. Liebig is inclined to think. Is it not rather one of the ultimate products of the chemical actions, the presence of which we have great reason to suspect in the act of muscular contraction?—*Comptes Rendus*, March 22, 1847.

THE NEW PLANET IRIS.

The following letter to The Times appeared on Wednesday, Aug. 18th.

SIR,—In addition to the Berlin maps, which we have revised, and in some instances corrected, ecliptical charts of stars down to the tenth magnitude have been formed for some of the hours of right ascension, which it is Mr. Bishop's intention to publish as soon as they are completed. On the 13th of August I compared Wolfer's map with the heavens, and was surprised to find an unmarked star of 8.9 magnitude in a position which was examined on June 22 and July 31 without any note being made. The mere existence of a star in a position where before there was none visible, would not have been sufficient to satisfy me as to its nature; because during an eight months' search I have met with very many variable stars,—a