ſhip with this letter, I ſhall make no apology to your Lordſhip upon this head; and only take the liberty of aſſuring you, that I am, with the moſt profound reſpect,

my Lord,

your Lordſhip's moſt obliged

and obedient ſervant,

William Watſon.

CII. *An Account of the Caſe of the late Rev.* James Bradley, *D. D. Aſtronomer Royal: in a Letter to the Right Honourable* George *Earl of* Macclesfield, *Preſident of R. S. from* Daniel Lyſons, *M. D.*

My Lord,

Read Dec. 16, 1762.

THE reſpect, with which the late Dr. Bradley aſtronomer royal, and Savilian profeſſor of aſtronomy in this Univerſity, was treated by the learned of all countries, and the eſteem, in which he was held by your Lordſhip, and the Society over which you preſide, muſt naturally make the world deſirous to be acquainted with the circumſtances of that illneſs, which occaſioned his death, eſpecially as his diſorder was in itſelf rather uncommon.

Under theſe circumſtances I flatter myſelf, that I ſhall do what will be very agreeable to your Lordſhip, and

and the Society, if I lay before you, and that learned body, a detail of the ſeveral particulars attending the caſe of ſo very worthy, and excellent a member, collected as well from the beſt enquiries I could make, as from the obſervations made by myſelf, who attended him in his laſt hours, and aſſiſted at the opening of his body.

He had laboured under a great oppreſſion of ſpirits for a long time; and for ſeveral years before his death frequently complained of a pain in his back, ſometimes attended with difficulty in the diſcharge of his urine, which he apprehended to proceed from the gravel.

On wedneſday June the thirtieth 1762. he rode out for the air, and upon coming home complained of pain in his back, and made a large quantity of water. At five o'clock the next morning he found himſelf labouring under a total ſuppreſſion of urine, from which time he never voided any without the aſſiſtance of the catheter. With its aſſiſtance however about a quart was drawn off every twelve hours, excepting one intermiſſion; when upon account of the difficulty of introducing the catheter, none was drawn off from friday morning July the ninth, 'till eight o'clock on the ſaturday evening. But both before and after that time the urine was regularly drawn off every morning and evening to the time of his death, on the thirteenth of July.

During his illneſs he often complained of pains in the abdomen. And his head was frequently diſordered, eſpecially when a ſtool was coming away; but after that had paſſed off, he was always more cool and reaſonable.

reaſonable. It was the opinion of Dr. Jones, who attended him conſtantly in the country, as well as of Dr. Lewis, and myſelf, who viſited him occaſionally from Oxford, that his pains were inflammatory, though not violently ſo. But where the inflammation was exactly ſeated, we could not preciſely determine; as it ſeemed often to ſhift it's ſituation, and the patient was himſelf incapable of giving us the neceſſary deſcription, his weak ſtate obliging him to ſignify his meaning more by ſigns than words, and thoſe not always intelligible. As nothing poſitive could therefore be ſaid with regard to the ſeat of the diſorder, the friends of the deceaſed deſired, that his body might be opened; and Doctor Jones and myſelf being preſent at the operation, I minuted down ſuch appearances, as preſented themſelves to our view, and collect the following obſervations.

The ſmall inteſtines, the exterior coat of the ſtomach, and concave part of the left lobe of the liver, were all conſiderably inflamed. The gall bladder was very large, and full of bile.

The fat, incloſed in the cellular membrane, ſurrounding the right kidney, was conſiderably waſted, and very much indurated; and appeared to adhere more firmly than uſual to the external ſurface of the kidney. Upon removing this kidney with it's fat, all the parts adjacent appeared much inflamed. The whole kidney was ſoft, and contained matter, ſo diſſeminated through its whole ſubſtance, that it iſſued out upon preſſure from every part; in the ſame manner as an abſorbed fluid does from the pores of a ſponge. No ſtone, or gravel, were found in the pelvis, or any other part of the right kidney.

The

The left kidney was nearly of the ſame pulpy ſubſtance with the right; equally contained matter, though not ſo large a quantity, and was equally free from ſtone, and gravel.

The vena cava, and the emulgent vein of the left kidney, were remarkably large.

The aorta was oſſifyed near its bifurcation into the crural arteries.

Two unnatural tumors grew on the left and lower ſide of the pelvis internally, near the junction of the os pubis with the iſchium. They were contiguous to each other; in circumference ſeverally ſomething leſs than a wallnut; and both taken together were three inches or more in length. When cut through they had the appearance of glands, and one of them contained matter, diſſeminated through its ſubſtance, in the ſame manner as the kidneys.

Upon examining the bladder, the proſtate gland was found enlarged, and indurated, and the internal coat of the bladder itſelf inflamed. But neither the bladder, nor the ureters, contained any ſtone, or gravel.

No morbid appearance was obſerved in the liver, lungs, or any other of the parts, beſides thoſe above mentioned.

From the above obſervations it appears, that the caſe before us was a general inflammation in moſt of the contents of the abdomen, and that the ſuppreſſion of urine was probably a ſymptom, in conſequence of the ſwelling and induration of the proſtate gland; which thereby cloſing the neck of the bladder, made the uſe of the catheter neceſſary. That the conſtitution was become extremely purulent. But as theſe collections

of

of matter do not appear to have deſtroyed any of the vital functions, ſo it ſeems reaſonable to believe that the immediate cauſe of his death was a general inflammation and conſequential ſphacelus in ſome of the abdominal contents.

Inſtances of abſceſſes formed in the kidneys from the lodgment of calculi are not unfrequent; but then the papillæ of the kidneys being irritated and inflamed by the ſtone, and in conſequence thereof the ſecretory tubes diſſolved into matter, the ſecretion is thereby deſtroyed and a ſuppreſſion of urine always takes place in regard to that kidney.

Two caſes are indeed mentioned, the one by euſtachius, the other in the Miſcellanea curioſa, where the kidneys, in one of the ſubjects, are ſaid to have been found putrid, in the other, ſemiputrid, and no calculus in either. Such caſes as theſe are very uncommon, and bear ſome reſemblance to the caſe before us; in which it is very remarkable, that though matter was intimately diſtributed through every part of the kidneys, yet the tribuli forming the urinary organs of ſecretion remained ſound, and properly qualifyed to perform their functions, even till death; as appeared by the urine being drawn off every twelve hours, till near the time of the patients deceaſe, and the bladder being found diſtended with urine upon opening the body. Whereas in the caſe recorded in the Miſcellanea curioſa, after a total ſuppreſſion of urine, the bladder was found ſmall and contracted, no urine having been excreted from the kidneys into it.

That the matter did not in the preſent caſe inſinuate into, or in any manner diſturb, the urinary

ſecretion is evident; ſince no pus was ever obſerved in the urine either before, or after the introduction of the catheter. How this extraordinary caſe comes to be ſo particularly circumſtanced ſeems worthy of conſideration. If the ſingularity of it ſhall merit any regard from your Lordſhip, and the gentlemen of the Society, it will give the higheſt ſatisfaction to,

my Lord,

Your Lordſhip's

All Souls College, Nov. 24th, 1762.

moſt obedient and

moſt humble ſervant,

Daniel Lyſons.

CIII. *Experiments to prove that Water is not incompreſſible*; *by* John Canton, *M. A. and F. R. S.*

Read Dec. 16, 1762.

HAVING procured a ſmall glaſs tube of about two feet in length, with a ball at one end of it of an inch and a quarter in diameter; I filled the ball and part of the tube with mercury; and keeping it with a Fahrenheit's Thermometer, in water which was frequently ſtirred, it was brought exactly to the heat of 50 degrees; and the place where the mercury ſtood in the tube, which was about $6\frac{1}{2}$ inches above the ball, was carefully