

the disease (as probably it was), it was necessary to keep a continual drain from the bladder, I introduced a male elastic catheter into the bladder, and left it there.

Having cut off a portion of the cervix and fundus of a calf's bladder, I attached, with a ligature, one extremity to the catheter, and tied, with a little narrow tape, the other extremity, in such a manner, that when the urine accumulated in it, the tape might be loosened and the urine discharged. By this plan of treatment the patient was kept dry and comfortable, and any accumulation of urine in the bladder was prevented.

On the 5th inst. I again repeated the examination of the parts within the pelvis, when I found that the uterus had resumed its proper situation.

In the case which I have reported, it seems probable that the distention of the bladder was the cause of the retroversion of the uterus, and all the other symptoms, as by removing the distention of the bladder, and preventing a return of it, all the symptoms subsided, and the retroverted uterus, per naturales vias, resumed its proper situation; consequently it is my opinion that Dr. Denman's theory of *retroversio uteri* might be the best employed to explain this case.

## OBSERVATIONS

ON THE

### "PUS GLOBULES" AS SEEN IN THE BLOOD.

*To the Editor of THE LANCET.*

SIR:—Having read in *THE LANCET* for September 21st, a condensed account of Mr. Gulliver's very interesting paper on the presence of the pus globule in the blood, during the process of inflammation and suppuration, I am induced to trouble you with a few observations on the same subject. In the first place, to add my testimony to the truth of the most prominent facts brought forward by that gentleman, but principally with a view to facilitate similar inquiries, by explaining a very simple method, of not only detecting (by the aid of the microscope) the presence of the pus globule, in the smallest drop of blood taken during life, but also of preserving the specimen for future reference. In this way a series of observations may be made with facility on the appearance of the blood corpuscles in various diseases, and of any addition to them of pus, or other visible material; whether the product of disease or of healthy function, as in the admixture of the chyle granule with the blood. From several observations that I have lately made, I feel warranted in stating it may be readily distinguished, after an abundant flow into the

blood. I think I am not going too far in hinting at the possibility of being enabled to trace the chyle granule in its after relations with the vital fluid, and, indeed, at the probability of its forming a constituent part of the blood corpuscule, on which subject I may shortly again trouble you with a few remarks.

The method which I have adopted, consists simply in procuring a drop of blood, by puncture with a needle, in the extremity of the finger, or by using the lancet in some less sensitive part, much in the same way, as in the ordinary operation for inserting the vaccine lymph. The drop of blood is to be received upon a piece of glass, which should be immediately placed upon its edge, so that the blood in gravitating may leave a single layer of the corpuscles at the upper part. Any superimposed layer will tend greatly to obscure the blood corpuscles themselves, and will entirely conceal the less frequently occurring particles. The glasses thus prepared, will enable the observer at once to detect the pus globule, which will generally be found interspersed amongst the blood corpuscles, especially near the margin of the specimen. I should observe that no further preparation is required to render the appearances permanent. For the purpose of illustration, I will now select two out of many specimens of blood thus prepared for microscopical observation, which have remained unaltered for two or three months.

The first, marked No. 7, I find, by reference to the catalogue, was taken from a patient labouring under phthisis, with purulent expectoration. With the half-inch object glass, which takes in a field of  $\frac{1}{16}$ th of an inch in diameter, as many as a hundred of the so-called pus globules, may be enumerated, and with the  $\frac{1}{4}$ th of an inch object glass, embracing a field of  $\frac{1}{8}$ th of an inch in diameter, sixteen pus globules may be distinctly seen.

In the second specimen marked No. 10, the blood was taken from a man suffering from suppuration in the forearm, after diffuse cellular inflammation. There, with the  $\frac{1}{4}$ th of an inch object glass, in a field of  $\frac{1}{8}$ th of an inch in diameter, I observe eight pus globules, or one half as many as in the case of phthisis.

It is necessary to state, that in blood taken from the human subject, and from animals apparently in health, the pus globules, though few in number, may be detected in almost every instance. This, in the minds of many, might appear to throw some doubt on the nature of these globules. I am myself strongly inclined to think they have been rightly designated pus globules. But if any one interested in this subject, wishes to form an opinion from his own observation, I shall be most happy to offer him an opportunity of doing so. I would

recommend him first to make himself familiar with the appearances of the pus globule and blood corpuscule, viewed separately; and then to mix some pus and blood artificially, allowing the latter greatly to preponderate. If a drop of this fluid be placed on a piece of glass for observation, no difficulty will be experienced in distinguishing the pus globules, which have precisely the same form, magnitude, colour, and appearance in every respect, as those which are observed to occur in such numbers naturally, where suppuration is being carried on in some part of the system. I have this morning procured a most interesting specimen of blood, containing a greater quantity of pus globules, and more clustered together, than I have hitherto seen. A hundred may be observed in a field of  $\frac{1}{66}$  of an inch in diameter. The drop of blood here alluded to was taken from the femoral vein of a goat. The animal died yesterday, and its death was caused by a needle which had pierced the right ventricle of the heart, and was partly seen on opening the pericardium, while the remainder was buried in the substance of the organ. The pericardium was much thickened; in some parts to the extent of two or three lines, and was adherent at the apex, but not elsewhere. It was coated by a rough adventitious membrane, and contained about three quarters of a pint of a dirty red and remarkably foetid fluid, in which no perfect pus globule, or blood corpuscule could be detected by the aid of the microscope, but innumerable exceedingly minute animalcules were distinctly visible, moving, but not so vivaciously, as those discovered by M. Magendie in the serum of the blood after putrefaction has commenced, and which he describes as voraciously attacking and preying upon the blood corpuscles.

In the review of M. Magendie's lectures on the blood, in the *British and Foreign Medical Journal*, I observe the writer doubts the existence of these animalcules. I have frequently seen them, nor is there any difficulty in doing so. I am not, however, so satisfied that they devour the blood corpuscles; they keep them in perpetual motion, so as to give the appearance of spontaneous movement in the corpuscles themselves, especially when seen with a glass of insufficient power to bring the animalcules into view.

As intimately bearing upon two very interesting questions, mooted by Mr. Gulliver, viz., the probability of the pus globule being a modification of the blood corpuscule, and as to the effect produced by the attempt of the latter to pass through the capillary system, I shall conclude by observing, that the pus globule is of the same size in all animals, viz., averaging  $\frac{1}{3000}$  of an inch in diameter. I speak from having seen it in the horse, dog, cat, mouse, goat; in the frog, salamander, toad, and snake; while it is

well known that the size of the blood corpuscule, and, consequently, that of the capillary vessels, varies much in these animals. I give the measurement of the following, taken for the purpose, while making these few observations:—

In man I find the blood corpuscule measures  $\frac{1}{217}$  of an inch in diameter; in the goat exactly one half, viz.,  $\frac{1}{434}$ , while in the oval corpuscule of the toad, the long diameter is  $\frac{1}{1017}$ , the short diameter  $\frac{1}{1356}$  of an inch.

I am, Sir, your obedient servant,

SAMUEL LANE.

## THE LANCET.

London, Saturday, October 19, 1839.

WE have given, in another page, an abstract of Sir JAMES CLARK's statement of the case of the Lady FLORA HASTINGS. The account of the *post mortem* appearances has already been published. The "Statement" is clear and candid, and none of the essential facts have been impugned. The discussions have turned chiefly upon the motives of the parties in the palace, and hot partisans have made this delicate history the handle of political warfare. But adventitious circumstances, imaginary motives, or political quarrels, have no connection with the medical bearings of the question; and we shall studiously avoid allusions to allegations, which may excite the passions, mislead the judgment, and foster envy, hatred, or malice, without promoting, in the slightest degree, either science or the public good.

Sir JAMES CLARK has described the symptoms of the case while Lady FLORA remained under his care. It is to be regretted that this leaves the medical history imperfect. Who attended Lady FLORA in Scotland? Why has no account of the previous attacks of peritonitis been published? And how does it happen that Dr. CHAMBERS and Dr. HOLLAND, under whose treatment the case terminated fatally, have neglected to complete its history? When the details of rare cases which may be confounded with pregnancy, are dragged before the public, it is exceedingly desirable that all the medical