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VIII. *Remarks on Urine, and the Prognostics which are derived from it.* By Dr. COLLENBUCH\*.

**T**HE superstitious ideas and erroneous opinions of the multitude, and even of many persons otherwise well informed, but ignorant of medicine, have made me think that it would be more useful to explain to that part of the public who are strangers to the healing art, the phænomena which are produced, whether in a state of health or sickness, than to make known empirical rules and modes of treatment, which are more dangerous than useful.

This object has been already partly fulfilled in different physiological and anatomical treatises, destined for those who are not physicians ; but let me only say a few words on a subject on which too many persons have false ideas, viz. on urine, and the prognostics derived from it.

The kidneys are destined to secrete from the blood the fluid known by the name of urine, and which cannot remain in the blood without prejudice to the health. The constituent parts of this fluid are different according to the age of the individual, the season of the year, food, drink, and other circumstances ; but in general the urine contains what is called salt of urine, a little common salt, some calcareous earth, and mucus. These substances, according to circumstances, are dissolved in more or less water. The colour, smell, and taste of urine vary according to the proportion of these ingredients to the quantity of water. Thus, if suitable quantities of salt, lime, &c., are dissolved in a proportionate quantity of water, the result will be urine of a citron-yellow, and which has a particular smell and taste, such as is found in the urine of a person in a state of health ; but if the proportion of water is too great relatively to other substances, the colour of the urine becomes clearer, and the smell and taste weaker. Supposing a contrary mixture, i. e. if these substances be dissolved in a smaller quantity of water, the urine takes a darker colour, a stronger taste and smell, and it will become more yellow, and of a deep or clear red. If it contains other substances, for example, a quantity of bile,

\* From the German.

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its colour will become of a saffron-yellow ; if the bile is corrupted it will become green, and black if there be any mixture of blood in the urine, as, for instance, in putrid fevers.

Thus it is from the appearance of the urine we are enabled to judge of the nature of the forces of the body, and of the different combinations of its constituent parts ; and on that account we have recourse to that fluid for the purpose of determining the state of the forces and humours of a patient.

1. Let us judge if these forces are active or not. We call *forces* those qualities of the body by which it performs its functions in the order and manner that are convenient. These forces may be more or less active. If we wish to give action to a force which is rather inert, we excite it by irritation. For example, when we feel a tickling in the soles of the feet, the toes and the foot immediately contract : since the skin or the fibres have this power of contracting themselves by the influence of irritation, it thence results, that the veins, which every where traverse the body, shrink, and consequently can only conduct a smaller quantity of the blood—merely the aqueous particles ; and if a similar contraction takes place in the region of the kidneys, they will receive only the aqueous parts of the blood, and will secrete a clear urine like water. This is what takes place in fevers when shivering fits are experienced. But this quality of urine, which in this case announces an augmentation of forces, may, under other circumstances, announce a weakness and relaxation of the body, particularly in the kidneys, which then make their secretions less perfectly. Such urine may indicate great danger, and even death. If it comes from persons attacked by inflammatory fevers, it announces that the blood is so thick, viscous, or near being coagulated, that drinks cannot mix with it, and are voided almost without alteration. I mean to state hereafter the consequences which result from this difference in prognostics by means of urine.

2. The urine makes us acquainted with the nature of the constituent parts of the body, and of their relative quantities. It enables us to judge also if those parts be strongly united together, or if they are very soluble, and tend to corruption.

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In the latter case the urine will be of a deeper brown colour, and often black, and its smell will be as foetid as the urine of a person in good health which has been allowed to stand a long time, especially if in a warm exposure. If the urine, then, at the moment of evacuation, has already acquired a foetid smell, and if the colour of it is dark brown, it may be safely concluded that the humours of the body are extremely soluble, and have a tendency to putrefaction.

If, by accident, any one of the constituent parts of the humours is augmented; if the secretion of a part of them, which, being hurtful or useless to the body, ought to be separated from it, is arrested,—for example, the secretion of sweat; or if the humours destined for other functions (bile for instance) enter into the blood, it follows necessarily that the quantity of the constituent parts of the blood, and of course of the urine also, will be changed: and thus the urine will take other colours and other qualities.

Thus when perspiration is suppressed, at least if the matter which should be exuded does not recoil into another channel, the consequence will be an abundant discharge of clear and limpid urine.

If bile be mixed with the blood, supposing the bile to be in a good state the urine will become saffron yellow: if it be corrupted, the urine will become green or black.

If the urine is turbid, or of a clear brown, it indicates that the functions of the body are disturbed, and that secretion cannot be made in the proper manner. This urine, because it has a resemblance to those of certain animals, is called *urina jumentosa*.

The urine of itself never proves any thing positively: other circumstances of the malady must confirm the presumptions which the appearance of the urine had enabled us to form; and it is very wrong to examine first the urine, and the other symptoms of the disease afterwards. If the physician takes the uncertain signs of the urine as certain prognostics of the disorder, the patient may, in his turn, regard that as a certain sign of the ignorance of his physician.

To prove what I advance, I shall only cite an example. Black urine indicates corrupted bile; or with one who has strained

strained himself, or met with bruises or violent treatment, it indicates the absorption of coagulated blood. In putrid fevers it announces the dissolution of humours; it may also indicate the suppression of hæmorrhoides, or the courses: and in women in childbed, the suppression of the *lochia*.

But supposing that a man who has been severely beaten in some scuffle, or trampled under foot, attempts to heal himself by domestic medicines alone, but still feels a continuance of pains in his back and body; and that, after bathing the parts with wine, or using some similar remedy, he finds to his great surprise, at the end of three or four days, that his urine is black,—immediately he sends it to his physician and asks what is his disorder,—as if the physician could know it by divination. If the physician is not aware of the real cause of the disorder, he never will divine that the patient has received blows, that his back is marked with black and yellow spots, and that his body contains coagulated blood, of which a part, however, escapes into the urine.

He will more likely say, if putrid fevers are then raging, that the patient labours under that species of fever, and that he will die soon; or, perhaps, he will name some of the disorders above mentioned as giving this blackness to the urine, according as he finds more or less resemblance in the appearance of that fluid to the indications which we usually expect from it of various disorders.

IX. *Twenty-sixth Communication from Dr. THORNTON, relative to Pneumatic Medicine.*

*To Mr. Tilloch.*

DEAR SIR,

No. 1, Hinde-street, Manchester-square, Feb. 18, 1806.

HAVING saved the life of a first cousin, sir John Braithwaite, (who by mistake took a two ounce phial of laudanum for another draught,) by means of acids and the inhalation of vital air, I had confidence in this practice, and a few days back tried it in a very decided case.

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