

News, Notes and Queries

ON THE TERM DIABETES IN THE WORKS OF ARETAEUS AND GALEN

THE word diabetes comes from the Greek verb διαβαίνω (diabaino) which means I go or I run through; and διαβήτης (diabetes) the thing the fluid runs through, that is a siphon or a water-pipe. The term diabetes seems to have been introduced into medical nomenclature by Aretaeus (Hirsch 1883, Reed 1954, etc.).

Aretaeus' description of the disease runs, according to Francis Adams' translation of 1856 (pp. 338–9), as follows:

Diabetes is a wonderful affection, not very frequent among men . . . The course is the common one, namely, the kidneys and the bladder; for *the patients never stop making water, but the flow is incessant, as if from the opening of aqueducts.** The nature of the disease, then, is chronic, and it takes a long period to form; but the patient is short-lived, if the constitution of the disease be completely established; for the melting is rapid, the death speedy. Moreover, life is disgusting and painful; *thirst, unquenchable; excessive drinking*, which, however, is disproportionate to the large quantity of urine, for more urine is passed; and *one cannot stop them either from drinking or making water.* Or if for a time they abstain from drinking, their mouth becomes parched and their body dry; the viscera seem as if scorched up; they are affected with nausea, restlessness, and a *burning thirst*; and at no distant term they expire. *Thirst, as if scorched up with fire . . .* But if it increase still more, the heat is small indeed, but pungent, and seated in the intestines; the abdomen shrivelled, veins protuberant, general emaciation, when the quantity of urine and the thirst have already increased; and when, at the same time, the sensation appears at the extremity of the member, the patients immediately make water. Hence, the disease appears to me to have got the name *diabetes* as if from the Greek word διαβήτης (*which signifies a siphon*), because the fluid does not remain in the body, but uses the man's body as a ladder (διαβάση), whereby to leave it.¹ They stand out for a certain time, though not very long, for they pass urine with pain, and the emaciation is dreadful; nor does any great portion of the drink get into the system, and many parts of the flesh pass out along with the urine.

In his book on the *Therapeutics of chronic diseases* (Bk. II, Chap. II, 485–6) Aretaeus writes about the cure of diabetes: ' . . . in diabetes, the flow of the humour from the affected part and the melting is the same [as in dropsy], but the defluxion is determined to the kidneys and bladder. . . . In the latter disease [diabetes] the thirst is greater; for the fluid running off dries the body. . . . For the thirst there is need of a powerful remedy, for in kind it is the greatest of all sufferings; and when a fluid is drunk, it stimulates the discharge of urine . . . '

Galen speaks about diabetes in several of his writings. As no good English translation is available, I have used Renander's Swedish translation in the following: In the book *On the localisation of diseases* Galen says: 'I am of the opinion that the kidneys too are affected in *the rare disease which some people call chamber-pot dropsy, other again diabetes or violent thirst. For my own part I have seen the disease till now only twice when the patients suffered from an inextinguishable thirst, which forced them to drink enormous quantities; the fluid was urinated swiftly with a urine resembling the drink.*' Further down he discusses thoroughly 'The mechanism in diabetes,' but this chapter is scarcely of special interest in this connection. He summarizes the results in the following words: 'Diabetes is a genuine kidney disease, analogous to voracious appetite.'

* The italics are mine, F.H.

¹ Altogether, this interpretation is so unsatisfactory, that I was almost tempted to alter the text. It is possible, however, that διαβάση is faulty, and that we ought to read διαβήτης.

News, Notes and Queries

When Galen says that some people call this disease chamber-pot dropsy,* and others diabetes, this seems to indicate without doubt that he has adopted the term introduced by Aretaeus, although he omits to mention the name of the author who first used it. It seems to me that this utterance could perhaps contribute to the settlement of the important problem, not yet solved, concerning Aretaeus' place in the history of medicine, whether prior to, at the same time as, or after Galen.

Aretaeus, and, as I suppose, after him Galen gave the striking name 'diabetes' to the characteristic disease which they had observed and described. However, what was the real nature of the disease they called 'diabetes'? It seems that this question has not been discussed seriously up to now. Subsequent authors seem to have assumed, without any reservations, that the 'diabetes' of these two classical authors has been our 'diabetes mellitus.' Aretaeus and especially Galen, accentuate the great rarity of the disease and the enormous thirst. These two characteristics seem to me to be very remarkable circumstances, favouring my suspicion that the 'diabetes' of these two authors does not correspond to our 'diabetes mellitus.' We must not forget that Galen had a very large practice in Rome at the time of the emperors; and it seems feasible to assume that diabetes mellitus was a very common disease in the capital of the world with its luxurious life. But Galen says frankly: 'For my own part I have seen the disease till now only twice; the patients suffered from an inextinguishable thirst which forced them to drink enormous quantities.'

This accentuating of the rarity of the disease and the enormous thirst directed my thoughts some time ago to another interpretation of the Greek physician's expressive word 'diabetes'. Could they perhaps have seen some cases of the rare diabetes insipidus? Of course, there is nothing to prove this, and it is possible to bring the statements of the Greek authors into agreement with modern experience. They may have observed and described some of those relatively rare cases of diabetes mellitus with exceptionally intense thirst. Such relatively rare cases have fascinated them, they have described them in their writings, whereas all other cases of diabetes mellitus without conspicuous thirst have escaped them and the limited diagnostic capacity of that time.

Numerous works of later Greek, Roman and Arabic authors follow more or less slavishly Galen's writings, and a disease called 'diabetes' is described in the same terms as in his works. Also medieval authors quote Galen who made no annotation of the sweet taste of the urine. This is the more remarkable, as it was a routine diagnostic method to taste the patient's urine!

As is well known, it was only in 1674, that the sweet taste of the urine was described by the great Thomas Willis. In this disease, he says, the urine is quite different from all the patient's drinks but also from all body fluids, 'being exceedingly sweet as if there had been sugar or honey in it'. Thereafter more than one hundred years elapsed until Matthew Dobson in 1776 showed that the sweet taste of the urine depended on sugar, which he prepared from the urine of diabetics.

The sweet taste of the urine of diabetics is said to have been noticed for the first time in India and possibly in China too, many centuries before our era. According

* The term 'hydrops ad matulam' was still known to nineteenth-century clinicians and Hooper's *Medical Dictionary* refers from this term to 'diabetes'.

News, Notes and Queries

to Gotfredsen, Huang-Ti's famous textbook *Nei Ching (Canon medicinae)* contains a description of a disease which cannot be any other than diabetes mellitus.

Hirsch says in 1883 that the earliest statements on diabetes mellitus are to be found in Sushruta's *Ayur-Veda* where Hessler's translation runs: 'Mellita urina laborantem quem medicus indicat, ille etiam incurabilis dictus est'. (When the doctor states that a man suffers from honey urine, he has also declared him incurable.) In another passage with a detailed description of the disease one reads: 'Dulcis fit urina, sudor et phlegma' (sweet is the urine, the sweat and the phlegm).

Concerning the supposed discovery of sweet urine in India the very critical Gotfredsen says: (translation from the Danish original) 'The Indians are usually said to have been the first in world medicine to have had an idea about diabetes; they are said to have discovered that the urine tastes sweet and will be secreted in copious quantities. They know that the sufferer's (prameha), main symptom is abundant water secretion. There are 20 subdivisions of this prameha; in two of them, sugar urine (iksumeha) and honey urine (madhumeha) the urine has a sweet taste. Among numerous secondary symptoms there are noted: sweet taste in the mouth, thirst, loss of appetite, vomiting, drying, and boils. As a further symptom it is also stated that the urine will be sucked up by ants and other insects.' However, it is never mentioned that the doctor tastes the urine and Reinhold Müller who has exposed the whole problem to a careful analysis on the basis of the original writings, has not found any positive proof that the Indians knew of the sweet taste of the urine in diabetes.

If Müller is right, how then shall we regard the 'discovery' of ancient Indian medicine that has attracted such attention and has been mentioned by so many authorities and has been called 'the crown-jewel of the Indian healing art' by Fåhræus?

However, this question belongs to the history of Indian medicine, and has little to do directly with my original question: the import of the term 'diabetes' in the works of Aretaeus and Galen: Does their term 'diabetes' mean diabetes mellitus or, at least in certain cases, diabetes insipidus?

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FOLKE HENSCHEN

THE ILL HEALTH OF JANE WELSH CARLYLE

THE ill health of Mrs. Carlyle plays a prominent part in any account of life in the Carlyle ménage. The nature of her illness or illnesses has apparently been the subject