

Medical History

Samuel Gee, Aretaeus, and The Coeliac Affection

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Introduction

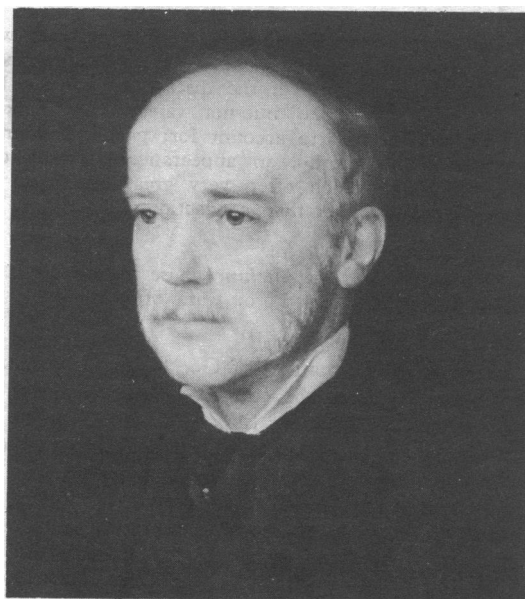
Last year the Royal Hospital of Saint Bartholomew in London celebrated the 850th anniversary of its founding by Rahere in 1123. Over the centuries many distinguished physicians and surgeons have been members of its staff but to paediatricians and gastroenterologists today it is Samuel Jones Gee whose name is most likely to be familiar (see photograph) because of his contribution to paediatrics.¹

Gee was born in London in 1839 and died at Keswick in 1911. He was a man with a deep love of the past and a passion for the accurate use of words, which, he had learnt, led to accurate thinking and caused fewer mistakes than fall to the lot of most mortal men. In 1888 he wrote in *St. Bartholomew's Hospital Reports*² a notable account of what he chose to call the coeliac affection, which remains one of the most vivid and accurate descriptions of the clinical state which we still call coeliac disease.

It seems very likely that the title he selected reflected his admiration for the work of a colleague recorded in Greek nearly two thousand years earlier. Gee, it is said, was often amused to find that some contemporary observation had been long since anticipated by a writer of former times. In this instance, we believe, he chose to be anticipated by the physician Aretaeus the Cappadocian, who with others, had described the coeliac state.

Reference is still sometimes made to the writings of Aretaeus, usually in the English translation by Francis Adams (1796-1861). Adams produced a Greek text with an introduction and a translation for the Sydenham Society in 1856.³ This work brought him into communication with a number of British and European scholars and won for him an honorary degree at the University of Aberdeen.

The chapter heading on page 350 of Adams's English version is identical with the title adopted by Gee 32 years later for his own report—"On the Coeliac Affection." This may be mere coincidence for Gee was quite capable of reading the original Greek and he refers to the use by Aretaeus of the term "coeliac diathesis." Gee and Adams may each have chanced on the same fairly conventional nineteenth-century phrase to render the text that Aretaeus probably wrote. But it is also possible that Gee chose his title specifically as a reference, an acknowledgement, and a compliment to Aretaeus and the older writers. It was certainly in character for him to do so and there is other evidence in Gee's account to show



Samuel Jones Gee, 1839-1911. (Reproduced by permission of the Royal College of Physicians of London.)

that Aretaeus was never far from his mind during the period 1887-8 when he was busy preparing his coeliac report.

To honour the 850th anniversary of Saint Bartholomew's Hospital we examined these and related matters—being just such subjects that might have interested Samuel Gee.

Gee's Clinical Description of Coeliac Disease

Gee first drew attention to the disorder that he later described as "a kind of chronic indigestion which is met with in persons of all ages" in a lecture delivered on 5 October 1887 at the Hospital for Sick Children, Great Ormond Street, London. He noted that because of the wasting, weakness, and pallor of the patient the bowel complaint might be easily overlooked and he went on to declare that regulation of the food was important, suggesting that errors in diet might be the cause, and concluded: "But if the patient can be cured at all, it must be by means of diet."

Gee is said to have performed over 600 necropsies in his lifetime but in the report on coeliac disease he allowed himself only one shrewd, ambiguously inconclusive comment: "Naked-eye examination of dead bodies throws no light upon the nature of the coeliac affection: nothing unnatural can be seen in the stomach, intestines, or other digestive organs. Whether atrophy of the glandular crypts of the intestines be

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ever or always present, I cannot tell." He was drawing attention, as Gibbons noted in 1889,⁴ to a subject not mentioned in any textbook current at the time. His account is thus full of great clinical insight and no little foresight; yet it is obvious that Gee himself did not regard the disorder he was describing as a newly recognized disease. Rather, it seemed to him an old one, referred to long ago by early physicians under other titles. "Aretaeus and Aurelian speak of the coeliac diathesis, *ventriculosa passio* (as who should say in English, *wambecothe* or belly sickness), names which are to be preferred, inasmuch as they connote nothing relative to the precise seat or nature of the disorder."

Despite the many accurate clinical observations which it contains Gee's text is full of conscious archaisms. His style does have a certain charm but it is the charm of an age other than his own. If it seemed mannered or bookish to contemporaries the whole account has its own peculiar sensibility and interest for us today. Below, for example, are the opening paragraphs.

There is a kind of chronic indigestion which is met with in persons of all ages, yet is especially apt to affect children between one and five years old. Signs of the disease are yielded by the faeces; being loose, not formed, but not watery; more bulky than the food taken would seem to account for; pale in colour, as if devoid of bile; yeasty, frothy, an appearance probably due to fermentation; stinking, stench often very great, the food having undergone putrefaction rather than concoction.

"His *stomack* is the *kitchin*, where the meat
Is often but half sod, for want of heat."

It is very much in the manner of Gee to give no clue to his reader about the source of the couplet he quotes which harks back to a theory of digestion that Aretaeus and the older writers would have found quite familiar and to which we refer later.

Gee's appreciation of seventeenth-century English literature coloured his expressions both in speaking and in writing. In a lecture he delivered in 1892, he spoke of "old books, such, for instance, as the writings of those learned anatomists Robert Burton and Phineas Fletcher, contemporaries of Harvey." He shared with Walton before him and Joyce after him a fascination for the poet Phineas Fletcher (1582-1650). Though critics today might be surprised to hear Fletcher described as a learned anatomist Gee was able to feel more kindly disposed toward Fletcher's long anatomico-geographical poem *The Purple Island, or the Isle of Man*.⁵ Better motivated, he was no less well informed.

It is, in fact, from one of the short "commendatory verses" by Francis Quarles (1592-1644), prefaced to Fletcher's poem, that Gee had abstracted the couplet which he quoted in his report. We record for the curious the opening verses of this compliment to his friend by Francis Quarles.

Mans *Bodie's* like a house: his greater *bones*
Are the main *timber*; and the lesser ones
Are smaller *splints*; his *ribs* are *laths*, daub'd o're,
Plaister'd with *flesh*, and *bloud*: his *mouth's* the *doore*,
His *throat's* the narrow *entrie*, and his heart
Is the *great chamber*, full of curious art:
His *midriffe* is a large *partition-wall*
"Twixt the *great chamber*, and the spacious *hall*:
His *stomack* is the *kitchin*, where the meat
Is often but half sod, for want of heat:

Just as obvious as his fascination for *The Purple Island* was Gee's admiration for the precise clinical observation, the "masterly completeness and clarity," of the physician Aretaeus. Aretaeus, it is now believed, belonged to the so-called pneumatic school of medicine and lived and worked about the middle of the first century A.D.⁶ His reputation

has varied greatly among the scholars since his works were rediscovered during the Renaissance, but Gee, like most physicians and medical historians, had only admiration for what he read. "Would you not suppose," he declared in a lecture of 1892, "that I have set before you a living picture in words, taken from the pages of a modern Aretaeus . . . ?" There was no higher praise he could give to the clarity and accuracy of a clinical description.

Aretaeus's Account of the Coeliac State

The extant works of Aretaeus the Cappadocian are eight books written in a stylized form of the Ionic dialect.⁷ The style is consciously archaic and very individual. The writer was influenced by a number of works in the so-called Hippocratic corpus, particularly the *Aphorisms*, and he sometimes quotes, mostly silently, from the Homeric *Iliad*. He seems to assume in his reader a knowledge of these and other works. The style has been much criticized, little studied, and never satisfactorily explained but one has the impression of moving in the world of conscious artist of considerable sophistication; yet his clinical descriptions are vivid and clear.

In the seventh section of book IV, the text of which is complete, Aretaeus describes a chronic disturbance of "pepsis," which with some liberty we shall call digestion and of "anadosis," which we shall call assimilation. For Galen⁸ at least, and probably for Aretaeus, who had written about a century earlier, "anadosis" includes two phases: (a) transmission of food from the alimentary canal to the liver (rather more than our absorption), and (b) transmission from the liver to the tissues. "Anadosis" is literally a yielding-up, a delivery, a dispersal.

The coeliac state, he says, occurs in adult patients and is associated with the passage of undigested or unconcocted food in a partly raw or liquid state. He is at pains to point out that he refers to a chronic illness and not to one "due to some transient cause lasting only a day or two." The patient also suffers from a general debility "due to starvation of the body." Food, when it enters the stomach, is broken down to some extent but "pepsis" is incomplete and fails to convert the food to normal chyme, "leaving it half-formed for lack of power to finish the process."

Exclusion from "peptic" activity leads to deterioration in the colour, odour, and consistency of the digestive product. "It looks white and lacking in bile, is offensive and muddy. Inaction renders it fluid and unformed with the sole merit of effective digestion in the initial stage." There are foul-smelling eructations and rumbling in the gut "with emission of flatulent material which is thick, liquid, and looks like white clay," and severe intermittent abdominal pain.

Aretaeus goes on to observe that the patient is emaciated, starved, pallid, and feeble, having no energy to perform any of his usual functions. If he even walks his limbs give way. This account is followed by a passage where we see the clear mind of the physician moving from the comparatively trivial observation of a localized clinical feature that suggests starvation to an important general principle and a theory of pathogenesis.

The temporal veins stand out (for starvation leads to hollowing of the temple), and veins are prominent all over the body. For not only does the disease cause failure of digestion, but there is failure to distribute even the partly digested product required for body growth, since it seems to me that the disorder is one that affects not only digestive but also assimilative processes.

Should the disease become more severe matter is even withdrawn into the stomach from the system as a whole. By this time there is a generalized wasting and what we would call dehydration, "patients are parched in the mouth, superficially dry and without sweat. . . . The illness is protracted and difficult to cure for even if it seems to have ceased it recurs without apparent cause, and even a slight dietetic error

can lead to relapse. In fact it now becomes a periodic occurrence."

The explanation which Aretaeus gives for this combined disorder of digestion and assimilation is based on a theory of alimentary function that was current in his time. It depends on the concept of "natural or indwelling heat." This "heat" was long believed essential for the process we call digestion. "Pepsis" in its non-medical sense often implied a softening, ripening, or change under the action of heat—the ripening of fruit by the sun, or the softening and change which cooking produces in food. It was natural to apply it to the "cooking," the coction of food, in the stomach region by means of the "natural or indwelling heat." Indeed the word "concoction," which Gee still used in 1888, is a fair rendering of "pepsis." For Aretaeus, then, the coeliac state was caused by chilling of the natural heat needed for "pepsis" and by slackening of the power of "anadosis."

We may never fully understand the habit of thought, the complex allusiveness, the "world" of Aretaeus but his humanity, common sense, logic, and clarity, his respect and evident love for the past, his humility, and his characteristic "silent quotation" of ancient writers must have endeared him to a kindred spirit such as Gee. Both of them seemed to need, even to seek, this spark from an older culture to kindle the fire of their natural genius.

Aretaeus's Account of the Treatment of Coeliac Patients

The first essential of treatment, according to Aretaeus, in the seventh section of book VIII, is to relieve the bowel of stress by rest and fasting—in this way its powers return. His therapy is then directed to abating symptoms such as flatulence, abdominal discomfort, and diarrhoea, as well as to promoting "pepsis" by the prevention of chilling and the restoration of "natural heat." Only when the disease does not respond to these measures should more powerful emetics and purges be tried.

The patient's mode of living, exercise, massage, and the "physiotherapeutic" methods of his time receive attention. Diet is mentioned but no details are given. He recommends "drinks taken before meals, for otherwise bread is very little conducive to trim vigour." Though the text of this section

is incomplete it is hard to believe, despite the interpretations of recent enthusiasts, that this passing reference to bread is some kind anticipation of the significance of gluten intolerance. Aretaeus was wise but scarcely so prescient.

Finally, it needs to be emphasized that Aretaeus recorded an illness which affected adult patients only. He even claimed that the disease was more common among the aged and among women, perhaps because these patients were deemed more deficient in "natural heat." He also draws a clear distinction between the chronic coeliac state which he described and a continuous diarrhoea which does occur in children "through transient intemperance (or incontinence) of food." Whatever this diarrhoeal state of children may have been it differed from the coeliac state.

It was not Aretaeus but Samuel Gee who observed for the first time that this coeliac affection was "a kind of chronic indigestion which is met with in persons of all ages" and that it was "especially apt to affect children between one and five years old." From this point onward he proceeded to make the first significant progress in the subject for about eighteen-hundred years.

The quotations made in this paper from the work of Aretaeus are from a paraphrase attempted by one of us (B.D.).

We thank the professor and staff of the Department of Greek in the University of Sydney for help and advice. Decisions about our final paraphrase and any errors incurred are our own.

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