CORRIGAN MEMORIAL LECTURE *

THE PISSING EVILE

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MR. President of the College, Mr. Chairman of the Corrigan Club, After a life time caring for diabetic patients I have come to realise how profound was the remark of Socrates “I know what I do not know”.

For, in spite of enormous advances in understanding and treatment, we have only recently come to appreciate that diabetes mellitus is not a clinical entity but rather a syndrome with many and varied causes all leading to chronic hyperglycaemia which we regard as the definitive diagnostic criterion. Indeed, I sometimes wonder whether hyperglycaemia with consequential microvascular and macrovascular disease, is, in fact, the basic primary pathophysiology or whether it is a late stage in a pathological process rather than its beginning.

Is it possible there are earlier markers which we have as yet failed to recognise? There is in fact some evidence that this may be so, e.g., Necrobiosis Lipoidica Diabeticorum which may antedate clinical diabetes by many years or a large for dates baby born to a mother many years before she develops chronic hyperglycaemia. I do not propose to pursue this line of thinking tonight nor indeed to discuss in any detail the spectacular leaps in knowledge which have come about in our own professional lifetime.

My predecessor, Henry Moore who introduced me to this field and to whom I would like to pay tribute as the father of modern medicine in this island, introduced insulin here in 1923: I still look after one of his patients who developed diabetes in 1925 at the age of fifteen and who, still fit and well at 74, in her person exemplifies the contribution of insulin. The years since the introduction of insulin have been filled with the plentitude of knowledge and never more so than in the last twenty during which we have seen the introduction of oral hypoglycaemics, purified insulin, human insulin, home monitors, insulin pumps, artificial pancreas (Biostator), pancreatic transplants.

A generation which had seen the “cure” of hypothyroidism by Thyroxine, must have had similar expectations for insulin therapy. Unfortunately, with the passage of time the problem of diabetes was shown to be far more complex and indeed each advance in knowledge has provided more questions than answers.

This is still true for although we know a great deal more, understand much more clearly and can manipulate therapy with some skill, the sad fact remains that we are desperately ignorant about the degenerative complications to which our patients are inevitable heirs, often in what should be the prime of life.

Having thus briefly referred to the present state of the art I now propose to review the evolution of knowledge which led to the introduction of insulin in 1922 and revolutionised the outlook for the diabetic. In recalling this story I fear I shall stoke fires of controversy, not all of which relate to the discovery of insulin.

It all began; or did it? in 1550 B.C. The Ebers Papyrus dating from that time was discovered in a tomb at Luxor in Egypt in 1862 by Georg Ebert and is now in the library at the University of Leipzig.
In it is described a treatment for polyuria which many regard as the first written reference to diabetes but I have some doubts, because there is nothing in this description which indicates that the polyuria was of that specific nature.

Aretaeus, who practised in Cappadocia (now known as Urgüp-Göreme in Turkey) (Henschen, 1969) from 81 to 138 A.D., gave a sparkling description which may reasonably be regarded as corresponding to what we would now call Type 1 Diabetes Mellitus. He wrote:

"Diabetes Mellitus is a wonderful affection, not very frequent among men, being a melting down of the flesh and limbs into urine... The course is a common one, namely the kidneys and bladder, for the patients never stop making water but the flow is incessant as if from the opening of aqueducts... Life is disgusting and painful, thirst unquenchable... one cannot stop them from drinking or making water... they are affected with nausea, restlessness and a burning thirst and at no distant time they expire. Hence the disease appears to me to have got the name diabetes from the Greek word for a siphon."

In 200 A.D. Galen (Henschen, 1969), the most famous physician of his time, wrote that he had seen only two cases of Diabetes Mellitus and ventured the opinion that the cause of the disorder lay in the kidneys:

"I am of the opinion that the kidneys too are affected in this rare disease which some call Chamber Pot Dropsy and others again Diabetes or Violent Thirst."

Galen's authority was such that this opinion was accepted for 1,500 years to be replaced then by an equally erroneous one.

The description attributed to Susruta in the Indian Vedic literature of the 6th century seems specific beyond doubt:

"Madhuma or honey urine is a disease from which the rich principally suffer. It is brought on by their own overindulgence in rice and flour. Ants flock around their urine. Boils and carbuncles are frequent complications. When the doctor states that a man suffers from honey urine he has also declared him incurable. Sweet is the urine, the sweat and the phlegm."

It is interesting that the sweetness of sweat and phlegm were noted — clear evidence that this was not simply a disorder of the kidneys.

Thomas Willis (1621 to 1675) in his book, "Pharmaceutice Rationalis", published in London in 1679, wrote:

"Those labouring with this disease piss a great deal more than they drink... are exceedingly thirsty and quickly grow lean... the urine in all is wonderfully sweet as it were imbued with honey or sugar. We believe it to be more an affection of the blood rather than of the kidneys caused by immoderate drinking of cider, beer or sharp wines or by sadness and long grief. As to cure it it is hard to draw propositions for its cause lies so deeply hid."

Unfortunately, Willis missed one essential point for he thought that the sweetness of the urine was due to a combination of salts.

Matthew Dobson (1745 to 1784) (Dobson, 1776) who worked in the Liverpool Infirmary from 1770 to 1780, described nine cases of diabetes in 1776. He evaporated two quarts of urine from one of them—Peter Dickenson, and obtained a white cake weighing ½ oz:

"The cake was granulated and broke easily between the fingers—it smelled sweet like brown sugar and tasted the same."

We recently repeated this simple test in a poorly controlled patient with similar results.

Still more interestingly, Dobson took off 8 ozs. of blood and noted that the serum was "opaque resembling cheese whey and being sweetish to taste."