1839

Major

Contains that no specimen is made to be cased in
this hospital during a considerable part of this year
Did Mr Major attend the hospital

Medical Dissertation

by William Mason

4 July 1839

21 Montgomerie St.

Edinburgh.

Observations on the treatment of Diabetes Mellitus.

With regard to the treatment of Diabetes Mellitus I may first observe that, whilst its constant symptoms are but imperfectly known and its proximate cause remains undisclosed, we cannot, until such difficulties be removed, easily form to ourselves the precise indications of cure in this complicated malady.

The curative measures, adopted in the treatment of Diabetes Mellitus, have

been as various as the opinions entertained respecting its pathological nature, but though no positive cure has as yet been discovered, still some progress has of late years been made in the knowledge of the proper treatment of this disease which may hence be said to have lost much of its rebellious and intractable character.

I shant entering into a lengthened history of the several modes of treatment which have been proposed, I shall confine to such only as are found to be most available in practice at the present day.

I shall however make a preliminary

observation on these states in which the
melitic urine commonly occurs, namely, first
as regards it saccharine state independently
of the increase of its quantity; and secondly,
as united this state in connection with an
augmented secretion.

Doctors Prout and Parr observe that
the discharge of an augmented quantity
of urine in addition to its saccharine
character indicates a more advanced or
severe stage of the malady, and that
the saccharine change is the more
important of the two.

A chemical examination of the urine,
therefore, ought to be always instituted

before the trial of remedial measures, and particularly during the progress of the disease as it enables the practitioner to determine with accuracy one important point, namely, the quantity of sugar it contains, and to ascertain the gradual advances towards recovery.

From a view of the foregoing considerations, as also from the probability of this disease being primarily and essentially dependent on some particular lesion of the digestive and assimilative functions, I shall confine myself to that amendment of the general symptoms can be expected only from a careful trial of

Such remedies as are calculated to establish the general health, restore the assimilative functions and healthy secretions, and alter the character, both as to quality and quantity, of the urinary secretion.

In attaining these important objects, attention must be directed to the vascular system with the view of removing any state of Plethora or local congestion that may exist.

It will be necessary to promote and excite the ordinary exhalations and secretions from the respiratory and intestinal mucous surfaces — to increase the perspi-

ration — upon the determination to the kidneys and diminish the morbid sensibility which usually keeps pace with the progress of the complaint.

The remedial means requisite for attain=ing the objects just noticed will vary exceedingly according to circumstances. The severity and various duration of the complaint; its exemption from, or coexistence with, serious organic compli=cations; the strength, constitutional bravery and age of the patient, will necess=sarily lead to a modification in the treatment of this disease as it occurs in different individuals. When the

disease is of recent origin and the strength of the patient not too far exhausted, blood letting is an expedient which has in several recorded instances of its adoption been followed by some favourable results. However, the collecting results of cases in which blood letting has been practised do not sustain the high repute which it had at one time obtained on the authority and rather sanguine recommendations of Dr Watts and other physicians. It would appear that the indications for the practice of blood letting are to

be sought for during the early stages
of the complaint — particularly
when it subjects urgent symptoms
of Metrorrhagia or renal or pulmonary
irritation. In the cases in which it is
admissible it may be necessary more
than once to perform venesection —
the appearances of the blood drawn and
the effects produced by the first operation
will, in most cases, enable the practitioner to
judge of the expediency of its repetition.
Venesection when judiciously practised, will pro-
=mote the action of other remedies such as

diaphoretics, of which mention shall be made.

From the constant feeling of debility and lassitude on the least exertion, Patients will sometimes refuse to submit to a trial of general blood-letting and naturally complain more of the want of a healthy than of a superabundance of blood. It will sometimes happen that blood letting will at first be either inadmissible, or, of little, or no service; and yet it will subsequently prove of very great benefit after the other parts of the treatment have ameliorated the system for it. If however any doubts

regarding the propriety of its repe-
-tition be entertained, the local
abstraction of blood, may in the manner
of cupping on the loins, or the hypo-
-chondria, or by the application of leeches
to the epigastrium, be occasionally
substituted and be carried to an
extent, as respects quantity and fre-
-quency of repetition on which the dis-
-cretion of the practitioner will enable
him to decide. Doctor Marsh mentions
(in the Dublin Hospl Reports Vol 3rd) a case
in which great relief was procured
by bleeding from the arm. He states

that "it was followed by the tepid bath;
and an immediate and decided im=
=pression was made upon the disease."
The application of leeches to the Epigas=
=trium will be found in many cases
indispensibly requisite. When there is a
feeling of internal heat and a sensa=tion
of fulness with what the patient des=
=cribes to be "a gnawing pain about
the stomach" it will, as stated by Dr.
Marsh, be attended with consider=
=able benefit. Some years ago, Dr.
Abercrombie made mention of a case in
which from "the stout habit of the pa-
tient, and the strong arterial action

"which was present he was induced
"to employ venesection. Soon after all
"the symptoms of diabetes disappeared
"and the patient was dismissed the house.
"Doctor A. had since heard that the
"disease was soon after established,
"and he had no doubt that it had
"already been the cause of his death."
(Lancet for '29–'30, Clin. Lectures)

One great advantage may attend the
local abstraction of blood, namely, that
its frequent repetition is not likely to
be succeeded by any material reduction
of strength. I may here remark that
cupping is preferable to leeching when

the debility of the patient requires that we should be accurate in estimating the precise quantity of blood intended for abstraction.

In short, bloodletting, both local and general, may prove of occasional service in Diabetes. Although general bleeding is for the most part transient in its effects, yet it may, I think, be advantageously resorted to under the circumstances I have already specified.

Among the medicines employed in the treatment of the disease under consideration, Opium

mentains a deservedly high rank. It is well adapted to remove uneasy sensations and sooth the general irritability of the frame: For, as Dr Marsh states, "there is a degree of irritative fever which, like hectic fever, interferes with and prevents the process of nutrition: this state of irritation in part accounts for the great value of Opium in treating the Diabetes."

But its exhibition when properly managed, is found, according to the prevailing Opinion of Medical Men, to have a decidedly beneficial effect chiefly in restraining the flow of Urine

and depriving it of many of its morbid qualities. These effects, however, are of a temporary nature and according to Dr Marsh's experience "when the medicine is withdrawn the complaint recurs, it may again and again check its progress but the tendency of the disease towards a fatal conclusion will not be ultimately prevented". It would appear there is some discordancy of opinion concerning the dose in which this drug ought to be administered. Some authors, who have treated upon the subject, affirm that Opium proves more beneficial when given in large doses, or in a quantity ranging from 10 to 24 grains during

the day; whilst others consider a less quantity — not exceeding 6 grains daily, as sufficient to procure the requisite effects of the Medicine in question.

In the 4th vol. of the "Med. Transac=tions" Doctor Warren has published two cases in which this Medicine had been given in large doses with seem=ingly good effect. In one case the dose was gradually increased to six grains, twice a day, the symptoms of the brain returned on the diminution of the dose, but was again removed by increasing it. In the other case the dose was gradually augmented to

5 grs of Solid Opium, 4 times a day.
The diabetic disease was subdued but
the patient died of Phthisis Pulmonalis.
I have never seen Opium given in
so large amount as that which I
have just noticed. In cases which
I had an opportunity of attending
in Dublin, the doses of Opium ad=
=ministered seldom exceeded one
grain and a half 4 times in the day.
It may not be judicious or safe to
push the dose to a considerable extent,
at farthest beyond 6 or 8 grs in the
24 hours, as pernicious effects have
accrued from the long continuance

of this medicine particularly when it has been administered in large amount.

As many circumstances influence or modify the action of Opium on the system, it is therefore difficult in a general point of view to estimate the extent to which it may be necessary to push its dose in order to obtain from its exhibition in Diabetes full and decided effects on the Cutaneous surface. Preparations to its administration, however, the digestive organs should be duly regulated by suitable means, for

it is very probable that constipation of the bowels — a state too often pre=
=valent in this disease, — interferes fre=
-quently with the operation of this medicine and thus renders necessary a much greater dose of it than would be otherwise adequate to promote the cutaneous secretions.

I am led into this belief chiefly from having myself experienced the effects of Opium in a severe neural=
gic affection during which I took, at regular intervals for some days, full doses of the Opiate Tincture, and found that, whenever fulness of the

bowels existed, it was not succeeded by that perspiring state of skin which had, under different circumstances, accompanied its operation.

After the system has been prepared for its administration, Opium combined with diaphoretics, or given in the form of Dover's powder, is perhaps the most generally applicable and beneficial remedy that has been employed. Its dose, however must be regulated accor=
=ding to the varying features of particular cases.

That form of Opium, namely. the Dover's powder, is generally considered more suitable to cases of diabetes than the Opium itself or any of its chemical

preparations; though indeed Dr. Bardsley has given the preference to the Acetate of Morphia which, he states, is not disposed to occasion the pain of head and constipation which invariably follow the free exhibition of Solid Opium. "The Acetate of Morphia may be found serviceable in removing the irritability and calming the mental agitation of the patient and thence it may in some instances be substituted for the Opium itself." (Cyclop. of Practical Med. p. 547).

Doctor Thompson, in his work on Therapeutics p. 403, makes the following observations:- "In comparing the effects of the Salts of Morphia with those of Opium, we are struck with some differences. From Acetate of

"Morphia, we find on the heat of skin, no
"elevation of the pulse, nor any signs of the
"violent propulsion of the blood into the
"capillaries, as is the case when the entire
"poison is taken into the system" Dr. Thompson
also states that, in the Hôpital de la Pitié
in Paris, where experiments were made with this
salt of Morphia by M. Bailly, it was found that
two grains neither augment the function of the
skin nor increase its temperature. In one instance
however when 6 grs. of the Acetate had been
swallowed by a medical man, the sweats were so
copious that the patient was forced to change his
linen nineteen times in one night." I should
be disposed to observe extreme caution in
exhibiting the Acetate of Morphia at least
to an extent requisite to produce its full

diaphoretic effects in cases of Diabetes in which, we can assure, much difficulty is experienced in establishing the cutaneous function. Still, as I have obtained no decisive information as to the difference between the effects of Acetate of Morphia and those of Opium, in Diabetes, I am unprepared to say hopefully whether the former medicine should, or, not, be in general preferred.

The bowels of the diabetic patient should every day be freely evacuated but care ought to be taken not to employ for this purpose Saline medicines excepting perhaps the Bicarbonate of Soda which has

been spoken of favourably by Dr Thankey who affirms that it has the advantage of preserving a free state of the bowels whilst it tends, in a very marked degree to diminish the flow of urine. Even Calomel should be avoided unless conjoined with Opium, or when we find it requisite to act on the biliary secretions and then a single dose of it may be given. The Compound pill of Rhubarb, of Aloes, or of Colocynth combined with suitable portions of Ipecacuanha, will promote the peristaltic action of the bowels and procure from them their necessary evacuations.

Sulphur in combination with magnesia and Salab either in the form of powder or electuary, will be applicable to most cases. It tends to promote diaphoresis

as well as to produce aberient effects.

Drastic purgatives are the most available in such cases, and ought therefore to be selected by the practitioner.

I should deem the rectal injection instrument as deserving of being daily made use of by those patients whose bowels are disposed to be in a state of torpor and constipation.

I witnessed its utility in the case of a young man who eventually sunk under his complaint. He injected almost daily a quantity of Chamomile infusion which had the effect of alleviating constipation and of inducing regular aberrin evacuations. Of course the enema may be rendered more active in its purgative properties according to the necessity of the

case or the will of the practitioner

Doctor Marsh recommends the bowels to be Kept every day truly evacuated. After alluding to the effects of Castor oil and Colocynth in such cases as came under his notice, he states that "it will be desirable in some instances to excite a temporary diarrhoea by the action of purga=tive medicines. It will be necessary, however, to proceed with caution; since any consid=erable derangement of the bowels will not fail to increase the severity of the disease. The safest course to adopt will be that of evacuating sufficiently with=out violently purging the patient." It is the opinion of this Physician that copious alvine discharges have the effect of dim=

=inishing the urinary secretion (Dub. Hosp. Reports 3 vol p 462)

The most important means which are requisite to recall the interrupted functions of the skin consist of either the vapour or tepid bath, and daily bodily exercise. Whilst the patient is in the bath he should have the surface of his body well rubbed with the flesh brush and in order to establish sufficient diaphoresis he should either before or after immersion be given a full dose of Dovers Powder. Moreover to maintain a permanently relaxed state of the skin it

with be necessary for him to wear a woolen
shirt with flannel next the skin and take
as much exercise in the open air as his
strength will admit of. The effect of
such treatment is manifested in the
state of the skin and urine as well
as the feelings of the patient. It may
be added that the sweating treatment
should not be pushed too far, lest cuta-
neous eruption, troublesome and difficult
of cure, should ensue.

Dr. Willis, in his late work on kidney
diseases, offers the following remarks on
Magnesia the effects of which he considers

as somewhat Specific in Diabetes. "Mr
Benjamin Phillips lately prescribed mag=
=nesia, upon two occasions, to the same
individual labouring under Melituria
in an early stage, and in each instance
with success: the Sugar disappeared from
the urine, the thirst and all the other
Symptoms of the disease were immediately
relieved and speedily vanished. I had
lately under my care at the Infirmary
for Children, a child about five years
of age, with Symptoms of Melituria well
marked; the urine was copious, of high
Sp. gr. (1.033,) soon spontaneously into
fermentation, yielding abundant bubbles
of Carbonic Acid gas for several days, and

"acquired something of a nervous character.
"The constitutional symptoms were also those
"of the disease; there was wasting, thirst,
"shrivelled skin, &c. The magnesia in half
"drachm doses in mint-water, three times
"a day, three grains of Dover's powder at
"night, castor oil in quantity sufficient
"to keep the bowels open, and a regulated
"diet consisting principally of eggs and
"meat had the effect of removing
"all the symptoms in the course of
"four days: the thirst was appeased, and
"the urine was reported as nearly natural
"in quantity" (l. 231) Unfortunately Dr Willis
knew last night of the case. In addition

to the foregoing, external irritation and derivation may be practised. For this purpose the excitement of artificial eruptions on the loins or thigh by the application of croton oil or antimonial ointment to those parts, seems to be the most preferable means. But to the production of any benefit the external irritation should be maintained for a considerable time or frequently reiterated.

The Animal food is given with a view of resisting the secretion of saccharine matter and furnishing the elements of urea and the animal salts to the blood.

Doctor Rollo particularly insisted upon the

nearly exclusive use of this diet; but Dr. Prout taking into account the pernicious effects which sometimes accrue from the too free indulgence in its use, recommends it with judicious restrictions and to be taken with a moderate proportion of farinaceous food.

Doctor Marsh. (3 Vol. Dub. Hosp. Reports) after alluding to a case in which fever was twice caused by the animal diet, says: "we may, I believe, with certainty conclude that a full indulgence in animal food, while at the same time the body is not exercised, must end in the production either of some febrile disease or of local inflamation. I cannot but object strongly to that mode of treatment which would enjoin upon the patient at once

a strict adherence to the Animal regimen, and Abstinence from exercise and bodily labour. I know not a disease in which a carefully regulated diet is of more importance than in this diabetes. The appetite is morbidly keen; its full gratification will certainly overload the Stomach and create distress. Fulness at the Epigastrium is a very frequent symptom as also a sensation of heat and Spasmodic constriction and tightness about the region of the Stomach; these feelings are always increased after a full meal." The diet, therefore, as to its quantity and quality, should be sedulously attended to by the Physician and taken repeatedly at short intervals during the day. The quantity of drink allowed should be as limited as possible, and

fluids should not be given when the stomach is loaded with animal or other food.

In short the cure of a disease so obstinate and fatal as the Diabetes Mellitus ought never to be entrusted to any one single plan of treatment or to various remedies in succession, but we should so associate them as to bring their combined action to bear upon the morbid conditions which seem to exist in particular cases.

The end.