

H. P. Roberts

The following observations on the comparative value of certain treatments of Intermittent Fever, were made on admissions to Hospital which took place between June 1st 1876 and 1st February 1877.

They formed 4 classes -

In the first were seventy-five cases, which were admitted successively, and treated without any selection but at haphazard. Either with medium doses of sulphate of quinine, or merely colored water.

The succeeding fifty cases were treated with Carbonic acid in glycerine - 3 grs of the former in 15 minims of the latter - administered three daily - These formed a second class.

In the third class were thirteen cases treated at the commencement with 2 tea-spoonful doses of the Tinct. Eucalyptus Globulus 3 times a day, and followed by large doses of sulphate of quinine when the attacks were not arrested.

The fourth class consisted of eight cases treated with large doses of sulphate of quinine, from 20 to 25 grains - with the present knowledge of Intermittent (malarial) Fevers, the treatment was necessarily empirical. The cases too, occurring in a Military Hospital were also open to considerable doubt; as there can be no question that men occasionally present themselves stating that they have been suffering from fever, merely to gain admission to Hospital, and thus to shirk



possibly some noxious duty. In addition, ^{to} this there must be taken into account the general bodily health of each man admitted, his age, the number of previous attacks, as it is well known after one poisoning with malarial the tendency to recurrence of the fever is certainly provoked and can be, when the system is weak, easily provoked. Nor were all the cases typical cases; the cold stage, or a marked cold stage being the exception, not the rule: so, any enlargement - notable enlargement - of the liver or spleen.

To guard against misposition as much as possible each man's temperature was taken on admission - and subsequently three times each day. Not that this proved any great criterion, however, as many cases being admitted with normal temperatures had no attacks of fever, whilst others admitted with an equally low temperature had repeated and severe attacks. The only possible way was to collect a fairly large number of cases, and get at a satisfactory result by the average. Two other points were attended to with the hope of rendering the conclusions as fair as possible, the temperature and state of the climate being one, and diet being the other.

With reference to the 1st point - the subjoined table of the average temperature of the air during the months of observation, with the rainfall, and admissions, seems to bear out the prevalent idea that the malarial poison (whatever that may be) is more general when the soil is drying quickly and giving up moisture under very powerful rays of the sun. The soil of this district is sandy, formed

Temperature, Rainfall, and Corresponding Admissions.

	Average Temperature	Rainfall	Admissions for ague
June	89°	2 ⁱⁿ 91°	7
July	83°	14.14	15
August	81°	14.75	11
September	79°	10.43	17
October	81°	-	73
November	76°	-	36
December	71°	-	29
January	70°	-	26

from disintegrated black trap, in many
parts lying over a clayey soil beneath.
But, though the admissions were most
numerous during October, - when the rain
had ceased and the sun's heat very
powerful - there was no evidence to
show that the malarial poison itself
was any more violent or more in-
-tense in individual cases than at
other times of the year -
with regard to the second point, diets,
not much light was thrown on this
head.

Upwards of fifty cases had the diet
taken, and an average ~~taken~~ ^{deduced} from 10
of these selected at random, and ex-
-tending over 40 days -

The diet, in cases where it was permit-
-ted, was weighed before cooking: and
in the remainder the experience gained by
previous weighments was used in form-
-ing a comparative estimate. Much
latitude must necessarily be allowed
in these observations, the question being no
more than a relative one however.

There can be no question, presumably,
that nourishment is one of the most es-
-sential points in disease where there
is tissue change: yet in these instances
the food did not seem to be in suf-
-ficient quantities, or of the proper qual-
-ity to mark decided results -

In all the cases, certainly in the average of
cases the diet was very low: and did
not reach the minimum laid down by
Parkes for an adult undergoing no labour
and merely necessary to support life. Yet,
it was singular that amongst the largest-
-latters, in several instances, the largest amount
of food consumed was followed, on the suc-

-ceding day by the greatest amount. (high-
est temperature) of fever.

The average diet gave from 80-90 grs of
nitrogen as the amount consumed daily,
with about 2050 grs of carbon.

The highest would represent from 145-
162 grs of nitrogen with from 4200
to 4150 grs of carbon.

The largest diets, giving two samples, were,

1. Rice	11 ounces	2. Bread	10 ounces
Bread	10 ounces	Rice	10 ounces
Dhall (Peas)	4 ounces	Butter	1 4 ounces
Butter	2 ounces	Mutton	2 ounces
		Dhall (Peas)	4 ounces

Total solids 27 ounces

27 ounces -

The smallest diets consisted of four ounces
of rice, taken with water, or eight ounces
of milk -

Class I, Treated, some with quinine others with colored water -

	Average no of previous attacks	average tem- perature on admission	Treatment	Average no of Subsequent attacks
13 (Europeans) - ?		98.2	Quinine, 10-15 daily	None
3 (Natives) - ?		104	Quinine 8 grs daily	None
18 (Natives + Europeans) - ?		101.1	Quinine 15 grs daily	3-4
5 (Natives) - ?		101.8	Colored water	{ 4 in 3 cases } { 5 in 2 " }
14 (Natives) - 2		102	Colored water	1-2
22 (Natives) - 24		101.2	Colored water	None

Nine of seventy-five cases treated, with thirty four
received quinine and had 1.7 number of subsequent
attacks, whilst forty one received colored water
and had only 1.04 number subsequently. There
may have been some doubt about the first 13

Cases amongst Europeans as the temperatures on admission did not indicate any febrile disturbance; although however that they had been suffering from fever, and that the quinine employed acted beneficially, the important method still shows the more favourable result.

Class 2; includes 50 cases treated with tartaric acid internally;

	Average temperature on admission	Treatment.	Average no. of subsequent attacks
21.	101.5	Carbonic Acid grijj. thrice daily	1
12.	102.2	do	2
11.	101. (nearly)	"	none
6.	101.4	"	5.

The total number of attacks gives an average of 1.5 to each of the 50 cases. Thus, ceteris paribus, carbonic acid internally did not seem more useful than quinine: whilst if it had no effect whatever, and acted as little medicinally as colored water, making the treatment an important one, ~~the~~ this latter method still would appear superior to quinine.

The 13 cases comprised in class III were treated with Eucalyptus globulus. If the fever did not appear to be checked after a few days, large doses of quinine were given. The preparation used was the tincture: and it was given usually in 2 teaspoonful doses, though at first in some cases only one teaspoonful, thrice daily.

Method of administering it, is hypodermically. From the large practice of a Civil Surgeon (Indoe) who had employed it, in 1874, upwards of 4000 to 5000 times, the results were so marked that no other method was used. There the solution used was the neutral sulphate, kept in an aqueous solution in a bottle suspended in hot water rather above the temperature of the body. The heat regulated by a small lamp under the vessel holding the water in which the bottle ~~holding~~ ^{containing} the solution was swung. Amongst these large number of cases, there was no authenticated case of so much as a sore, or sloughing of the skin: the needles of the syringes always being kept very clean: and the solution kept fresh, and occasionally filtered.

This method was adopted here, with the usual benefit, until October 1875, when his cases of ~~fatal~~ tetanus occurred after the use of the syringe. An account of them was published in the 'Lancet' of May 8th 1876. Their occurrence here was sufficient to stop the use of the hypodermic method, and to prefer a less satisfactory or less immediately effective remedy to the alternative of such a possible termination. There can be no question too, that as a general rule, private patients do not care to submit to anything of an operative form of treatment, so that the question is how to check an ordinary attack of Intermittent Fever without the patient running the risk of a sore arm, or the remote - but still quite possible - chance of tetanus ensuing -

Looking at Class I it certainly appears that, the attack having been brought about either by exposure, or fatigue in persons who had already (most probably) suffered from intermittent-fever before, the really beneficial remedy was the fact of their being admitted to a cool hospital ward, to the enjoined recumbent posture, and the accompanying quietness. Now, it seems certainly to be a cardinal point: in practical practice this is not nearly so easily enforced: the patient feeling better gets up, moves about, and possible over-fatigues himself to an extent that induces a recurrence of the fever.

In cases again where quinine is used, there is no question but that one large dose is by far the most satisfactory. Amongst the men under observation it was quite remarkable how in quite 50 per cent of the cases, by little cinchism, or to such a slight extent that it was at any rate not worthy of note, was produced by 20 grain doses.

The internal use of carbonic acid, seemed to have no reliable effect, nor does the use of the Juice: *Eucalypti*: *Strobilus* -

During these observations there were 2 cases of remittent fever treated: one lasted 38 days, and the other after 41 days was sent away almost in a dypnic state for a change of air to a place about 40 miles off near the sea. He eventually recovered. In both cases, (appended) quinine by the mouth appeared first. In case I on the ~~22nd~~^{18th} day, quinine

was given hypodermically: and it is noteworthy that after this the temperature never attained the same height ^{as before}. In case II cold baths were discontinued at the urgent entreaty of the friends of the lad. However they appeared to be very beneficial. This was the 1st case in which Carbolic Acid internally was tried: and from the apparently beneficial effect on the temperature great things were anticipated. However after a few days the temperature again began to rise steadily. This lad was supported by soup, broth, port wine, champagne, milk; in fact it was the stimulating diet alone which appeared to keep him alive so long: as he was reduced to a mere skeleton, complicated with bed sores.

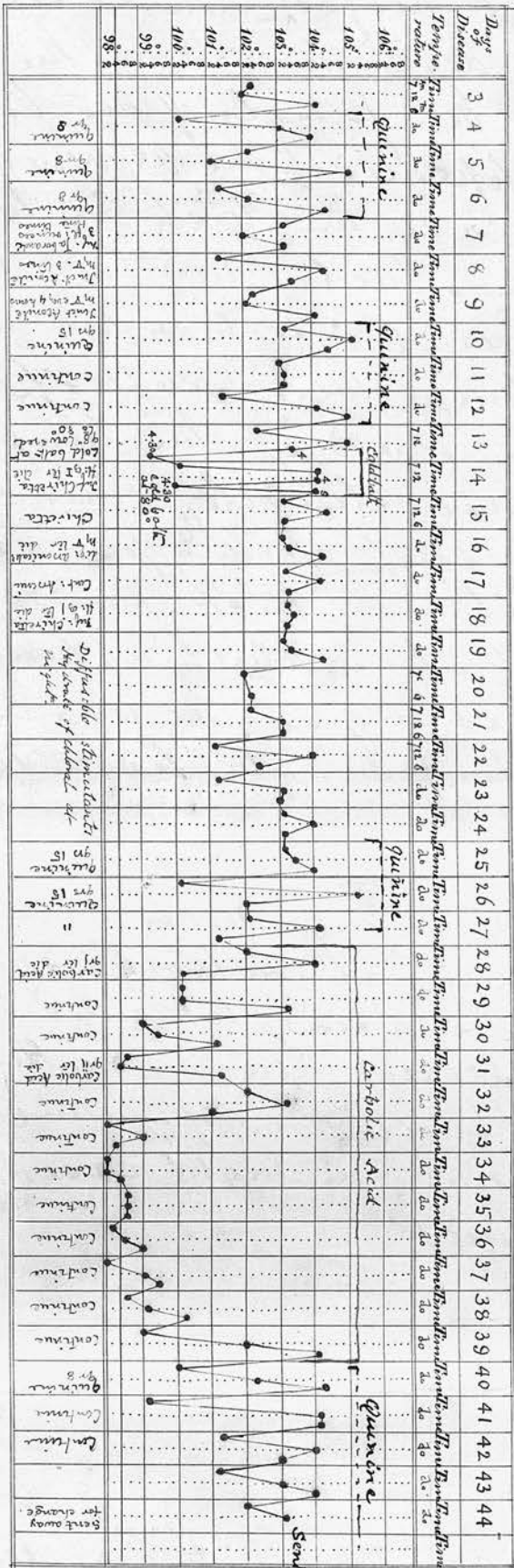
In remittent fever, then, I should have recourse to cold baths. with the hypodermic method of giving quinine as a final ~~resource~~ resource (I cured personally after the 2 cases of tetanus I cured not resort to it sooner) - in intermittent fever, of any severity - large doses of quinine, not less than 20 grains; in mild cases rest, coolness, and quiet.

Daroda.

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TEMPERATURE CHART.

Case. II. Sewak - age 14. Remittent Fever.



- but the discharge from the tube is more bloody, Evidently from the pressure of the lower end of the tube upon the internal surface of the trachea.
- 15th Albumen almost absent, the voice has so far returned as to be heard at the bottom of the stairs
- 16th wound still improving: ~~wound~~ albumen still distinct: discharge still bloody: no change in treatment.
- 17th a tube of gutta serena is substituted for the silver one but this he objects to partly because of the greater difficulty in changing it, & partly because it has not yet got accommodated to the parts.
- 18th The gutta serena tube still causes him great discomfort, though the discharge is certainly less bloody - he sings & whistles with his fingers on the mouth of the tube.
- 19th On this the 11th day after the operation, the tube is finally removed & the wound dressed with boracic acid ointment & straps. The albumen being still distinct, the plain milk diet is with some difficulty persisted in.
- 20th The wound seems closed.
- 25th The albumen being for the first time quite absent, he was allowed fish for dinner. There was a little albumen on the following day, but it never reappeared, & his improvement henceforward was uninterrupted.

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