are remedies also worth trying on this view, and especially thymol, which has been suggested to me by Dr. Burdon Sanderson as a more powerful and pleasant agent of the same class. The remedy will not long be wanting when the morbid process is fully understood.

BATH THERMAL MINERAL WATERS: THEIR USES AND ABUSES.

By A. B. BRABAZON, M.D.,
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NOTWITHSTANDING the title with which I have prefixed the purely practical remarks which I am about to offer to the readers of the JOURNAL, I fear some may consider the subject a dry one.

In many aspects, the subject has been well nigh worn out; and the deservedly highly extolled natural beauties of Bath, its environs, its antiquities and its salubrious climate, its fauna and flora, have all been eloquently described in language which I dare not and could not emulate. The task which I have set before me is one which, both for writer and reader, is bereft of all such charms and devoid of all such interest. My object is purely practical, as will be my observations; and in this sense alone do I venture to place them before my professional brethren, for the following reasons.

1. Because I am not aware of any attempt, founded on statistical information combined with personal experience, to classify, arrange, or tabulate, in any systematic form, the effect of the Bath mineral waters on the patients submitted to treatment therewith, either as regards age or sex, whether in hospital or in private practice.

2. I feel assured that the want of some such information must occasionally, and indeed frequently, be felt by my professional brethren, living, possibly, at a great distance from Bath, when called upon to decide, in any given case, whether the chances of cure or improvement are such as to render it advisable for the patient to undertake, possibly, a long and tedious journey.

3. I know, from personal observation, and I think my colleagues in connection with the Bath Mineral Water Hospital will bear me out in the statement, that the want of some such information is occasionally made painfully apparent in the character of the recommendation of candidates for admission to hospital, which are submitted to the medical staff. Moreover, it is not only in hospital cases that one finds such want of correct ideas as to the therapeutical powers of the waters displayed, but also, and probably more frequently, in private practice. I have, in my own experience of sixteen years, frequently met with patients sent to Bath, I might say to die, to whom the long journey must have been a cruel and painful infliction, and to whom even alleviation of their sufferings was almost an impossibility, unless the Bath waters were a veritable "Pool of Siloam". Such are the cases, fortunately rare, which bring such bitter disappointment to those concerned, and are calculated to cast doubt and discredit on the efficacy of these mineral waters, which are, I confidently believe, second to none in their curative powers in cases suitable for their administration.

In making this humble attempt to arrive at even something like definite conclusions on the subject in hand, I must beg my professional brethren to remember that the conditions under which such an attempt is made differ widely from those which obtain in reporting or relating circumstances connected with the history of disease otherwise treated. The cases on which are founded any observations, statistical or practical, which I may venture to offer, are, as a rule, subacute or chronic in their character. There are no hourly or daily changes to be reported; no frequent variations of pulse, temperature, or even treatment, to excite any special interest. The process, by which alone we can arrive at anything approaching to definite conclusions is the tedious and comparatively uninteresting one of observation, not of individual, but of aggregate cases of disease, as they are presented to our view in hospital or private practice. Thus, it becomes necessary to arrange, in some tabulated or statistical form, those cases from which we wish to derive therapeutic information of any scientific or practical value.

1. I propose to tabulate, under certain heads, the diseases which have been treated in the Bath Mineral Water Hospital during the past three years.

2. I shall append statistical tables representing the results of treatment in these various forms of disease as to sex and age, and giving the percentage as regards results: first, respecting sex; secondly, respecting age—these percentages being averaged on a given number of patients discharged from hospital within the several periods of life recorded.

3. I shall endeavour, as far as possible, from hospital statistics and from general observation, to delineate these diseases, in their general

aspect as well as in their particular forms, which positively or comparatively are successfully treated by the use of the Bath mineral waters, whether used internally, or applied externally, or administered in both ways.

I may here mention that, although the general rule adopted in almost all health-resorts famous for mineral springs—viz., that of restraining patients from taking any kind of medicine while making use of the water—is followed, yet, under certain circumstances, the most experienced physicians in Bath do not hesitate to supplement the waters with additional therapeutical means when they consider it judicious to do so. On the present occasion, it is impossible for me to individualise those cases so treated, but at some future time I may be able to do so. At present, I can only, in my observations, allude generally to those cases in which my individual experience would lead me to adopt some such supplemental treatment.

The diseases admitted or admissible into the Bath Mineral Water Hospital may be divided, for convenience of description, into four classes.

1. *Constitutional Diseases*; 2. *Local Diseases*; 3. *Diseases from Specific Causes*; 4. *Miscellaneous Diseases*. These four classes will include, each respectively, certain subclassifications, which I shall tabulate as follows.

1. *Constitutional Diseases*, producing local or general effects: A. Rheumatism (including muscular, articular, and chronic rheumatic arthritis); B. Gout (pure and so-called rheumatic gout); C. Sciatica (gouty, rheumatic); D. Lumbago (gouty, rheumatic); E. Coxalgia (gouty, rheumatic, or arthritic).

2. *Local Diseases*, with or without constitutional causes: a. Hemiplegia; b. Paraplegia; c. Chorea; d. Neuralgia; e. Paralysis after Injury; f. Hysteria (simple and complicated); g. Wasting Palsy; h. Locomotor Ataxy; i. Skin-Diseases (including eczema, lepra, psoriasis, impetigo, acne).

3. *Diseases from Specific Causes*, such as effects of metallic poisoning, including dropped wrist, colica Pictonum, mercurial poisoning.

4. *Miscellaneous*: Amenorrhœa, dysmenorrhœa, anæmia, debility, and others of various types which occasionally crop up among patients who may have been admitted for other forms of the diseases above mentioned.

The results of treatment I have divided under four different heads: 1. *Cured*; 2. *Much Better*; 3. *Better*; 4. *No Better*. As this classification may be considered somewhat arbitrary, I must beg leave to explain that, according to a time-honoured custom, all patients discharged from the hospital are discharged under one of the above-named divisions. I shall, as far as possible, define the meaning to be attached to these four terms or divisions. Under the head of "Cured", I include all those patients who leave the hospital free from all symptoms (constitutional or local) of the disease for which they have been admitted, and who are discharged able to follow their special trades or avocations. Under the head of "Much Better", I include all those patients who have obtained relief from pain and other prominent symptoms, and who are most of them sufficiently recovered to return to their usual occupations. Patients discharged as "Better" I may describe as simply temporarily relieved of their most painful and prominent symptoms. Under the head of "No Better", I comprise all cases in which, after sufficient trial, the mineral waters, however administered or supplemented, have been perfectly inefficacious.

I shall take the several diseases enumerated above into consideration in order, commencing with that of which the greatest number has passed out of hospital—viz., rheumatism in its various types and kinds.

During the year ending May 1877, I find 415 cases of rheumatism were discharged from hospital; that number being composed of 269 males and 146 females. Distributed according to periods of life, I find the following results:

	Males.	Females.	Total.
Under 20	23	24	47
20 to 40	111	69	180
40 to 60	107	43	150
Over 60	28	10	38
	269	146	415

In explanation of the appended tables, I beg to state that Table I gives the results of treatment under four divisions, as above described, and within four periods of life; it also gives the total of males and females regarding these separate results of treatment, according to ages above mentioned.

Table II gives the percentage of results of treatment in proportion to numbers discharged under ages mentioned and according to sexes. As an illustration, under 20 years, 13 cases (males) were cured; total number of males discharged under 20 = 23; therefore, the percentage

of males cured under 20, in proportion to total number of males discharged at same age = 56.5.

TABLE I.—Cases Discharged.

Result.	MALES.				FEMALES.				Total Males.	Total Females.	Total Both Sexes.
	Under 20.	From 20 to 40.	From 40 to 60.	Over 60.	Under 20.	From 20 to 40.	From 40 to 60.	Over 60.			
Cured	13	34	18	4	8	8	6	0	69	22	91
Much better.	10	67	74	14	13	50	23	8	165	94	259
Better	..	9	10	6	3	8	11	1	25	23	48
No better	..	1	5	4	..	3	3	1	10	7	17
Total	23	111	107	28	24	69	43	10	269	146	415

Table III gives also the percentage of results as affecting both sexes separately and collectively, according to total discharged.

TABLE II.—Percentage of Cases Relieved, etc.

Result.	MALES.				FEMALES.			
	Under 20.	From 20 to 40.	From 40 to 60.	Over 60.	Under 20.	From 20 to 40.	From 40 to 60.	Over 60.
Cured	56.5	30.6	16.8	14.2	33.3	11.5	13.9	..
Much better.	43.4	60.7	69.1	50.	54.1	72.4	53.5	80
Better	..	8.1	9.3	21.4	12.5	11.5	25.5	10
No better	..	.9	4.6	14.2	..	4.3	6.9	10

TABLE III.—General Percentages.

	Total Males.	Total Females.	Total both Sexes.
Cured ..	29.7	15.6	21.9
Much better ..	61.3	64.3	62.4
Better ..	9.7	15.7	11.5
No better ..	3.7	4.7	4.9

I trust the explanation I have given will enable my readers to follow me through the following analyses of results.

First, as to those discharged "cured": among males, the percentage falls regularly with increasing age; among females, the percentage becomes lower, but not in regular gradation, as we find the percentage of those discharged cured is higher between 40 and 60 than between 20 and 40. It is not easy to explain this apparent anomaly; had the ages been divided into decades, the cause might have been more apparent, and would probably be found to exist in the fact that between 20 and 40 is the childbearing age, bringing with it all the anxieties of domestic life, and rendering the sufferer much less amenable to treatment and much more difficult of cure than those of the male sex at the same age. The percentage of cures under twenty is, both male and female, proportionately to other ages, very large, 56.6 for males and 33.3 for females; doubtless, at this period of life, disease has had less time to stamp the patient with irretrievable consequences, and, moreover, very many of the cases admitted under twenty are suffering from effects of acute rheumatism, and are certainly more favourable cases for treatment as regards a prospect of cure than cases more advanced in age and more chronic in their character. The total percentage of cases among males in proportion to total number of males discharged is largely in favour of the sterner sex, amounting in males to 29.7, and in females to 15.6; in other words, the number of cures effected in males as compared with females is nearly two to one per cent.

The average of cures per cent. in both sexes collectively (21.9) is, I think, sufficiently large to demand attention; and I should think, if compared with the results of treatment of similar institutions either at home or abroad, were such a proceeding possible, would be found as favourable as could be truthfully represented.

I next come to the averages per cent. of those discharged "much better"; and I beg of my readers to attach to this term a value neither more nor less than that contained in the definition already given: 259 patients out of a total of 415 were discharged under this term, 165 males and 94 females. The percentage under this head is in favour of the females in the proportion of 61.3 to 64.3. The females have the higher percentage under twenty, from twenty to forty, and also over sixty. Males have the advantage at the period between forty and sixty. I would explain these averages in this way. Females, happily, in our country, are objects socially of great care and attention, and,

accordingly, girls under twenty are probably more objects of solicitude and anxiety, and less exposed to climatic influences, than lads of the same age, and their complaints are sooner attended to. Between twenty and forty, for a somewhat similar reason, females have the benefit of treatment sooner than the bread-winners of the family, who, at this period of life, can least afford, and are most unwilling, to succumb to effects of disease; but after forty comes the grand climacteric of female life, with all its constitutional disturbances and eccentricities. No wonder if we find, then, all treatment of disease comparatively ineffectual. The number of both males and females discharged over sixty as "much better" (only 22) are too few to enable us to arrive at a definite conclusion; as it stands, the percentage is in favour of the females in the proportion of 80 to 50 per cent.

I now come to those patients discharged under the category of "better". I confess, knowing the elasticity of that term, I feel much less disposed to place implicit reliance upon any conclusion arrived at under this head than on those arrived at under the other three heads. Many may be considered as very little more than "no better", indeed, a considerable number almost inappreciably so. The numbers discharged thus are comparatively small—25 males and 23 females, making a total of 48; here, again, the percentage is in favour of the females in the proportion of 15.7 to 9.7.

Last and lowest in numbers, but far from least in importance, I come to the consideration of those patients discharged "no better". The total number discharged thus, according to the records of 1876-77, amounts to but 17, composed of 10 males and 7 females; but I cannot help thinking that this number might receive a considerable addition from those described under the previous head. The hospital physicians are compelled, to a considerable extent, to accept the statements of patients, on being discharged, as to their actual condition; and, doubtless, many patients, from a feeling of thankfulness and gratitude for kind treatment in hospital, declare themselves better, who might more strictly speaking be relegated to the ranks of the "unfortunates". Moreover, I may say there are very few patients indeed who do not leave the hospital much improved in their general condition, though not improved as regards their specific ailment, and who gladly, on this ground, pronounce themselves better. However, I can, from personal observation, positively affirm that the number discharged "no better" is insignificant in the extreme. Analysis of the statistics shows that, under twenty, there were no patients discharged as "no better", either male or female. Out of 111 male patients discharged at ages between twenty and forty, one was no better; out of 69 females discharged within the same periods, three were discharged in the same condition. Out of 107 male patients discharged between forty and sixty, five were "no better"; 43 females were discharged within the same periods, and three were in a similar condition. Twenty-eight males were discharged over sixty; four received no benefit. Of ten females within similar periods, one was no better. The percentage between twenty and forty is much more unfavourable among females than males, being in the former sex 4.3, in the latter .9. From forty to sixty, the average is in favour of the males in the proportion of 4.6 males to 6.9 among females. Over sixty, the fair sex have it all in their favour, as the female percentage of "no better" is only 10 against 14.2 on the male side. I think the above percentages are only what we might expect. Up to sixty, the weakness of sex in resisting the effects of such a disease as rheumatism in its varied forms is palpable, and consequently females are less amenable to treatment than males; but after sixty the effects of the "battle of life", in addition to the consequences of disease, produce more hopeless cases among males than females. On the whole, the male average presents a more favourable aspect, though slightly so, than that of females, standing as 3.7 against 4.7. The total percentage of those "no better" in the combined sexes is 4.9, very low indeed.

I have now arrived at what may be called the summing up of the statistical evidence as to the efficacy of the Bath mineral waters in the class of disease under consideration. I know that evidence of this description, devoid of records of accredited clinical observation, may, by some severely critical members of the profession, be considered useless or even derogatory in a scientific point of view. No one knows better than myself that, as regards science, it may not be of much utility; but I fully believe that, as far as regards the practical object which I have in view, it will be found of considerable advantage. I have simply recorded results of diseases diagnosed by the hospital physicians, and I cannot think that there can be much doubt in such diagnosis, as there cannot have been much difficulty.

I think the foregoing statistics of the results of treatment as to age and sex will sufficiently point out those cases which may be considered favourable or unfavourable. I will venture, however, to make some remarks, as the result of my own personal observation, extending over a considerable period of time.

In estimating the probable amount of benefit or improvement likely to be derived from the use of the Bath mineral waters in any given case of rheumatism, at least two conditions must be considered, independently of age or sex: first, of *complications*; secondly, *conditions of parts affected locally*.

As to *complications*, those of the head and chest are the most likely to arise. I only give my own private opinion on these conditions. I have an unfavourable opinion of this form of mineral water treatment in cerebral complications suggestive of organic disease, whether it be in rheumatism or any of the diseases usually submitted to such treatment. As regards functional disturbances, such as are frequently produced by rheumatic poison—*e. g.*, headache, vertigo, visual affections, etc.—I believe that they form no bar to the use of the waters, carefully applied, internally or externally. I have in my own private practice, and also in hospital cases, met instances of rheumatism affecting the membranes of the brain, frequently preceded by rheumatism of the scalp, which were permanently relieved by the mineral water treatment. In such cases, the diagnosis is occasionally obscure.

In chest-complications, as we would expect, those of the heart are by far the most frequent. Here, again, the existence of organic or functional disease makes all the difference. Rheumatic poison, as we all know, produces functional cardiac affections generally of the anæmic type; but I have generally found the internal use of the waters, occasionally supplemented by tonic treatment, produce the desired effect. In organic cardiac affections complicating rheumatism, I consider serious questions may arise as to the advisability of such treatment. In a case of decided fatty degeneration, I should certainly not advise baths. In cases of valvular disease, much would depend on the age of the patient. Were he or she over sixty, I might advise the internal use of the waters, but not the baths. I am speaking, of course, of the treatment of the rheumatic, not of the cardiac, affection. Under forty, and certainly under twenty, I do not think the existence of valvular disease need absolutely prevent the careful and judicious administration of the waters sufficiently far to alleviate pain and other symptoms in chronic rheumatism; but I must be understood to say that much depends on degree as to the valvular affection.

As to pulmonary complications, those most frequently met with in rheumatism are bronchitis, asthma, and phthisis. Bronchitis does not appear to me to be so frequently a complication of rheumatism as of gout; nor do I think that the existence of chronic bronchitis predicates the probable inutility of the mineral waters in a given case; neither does the existence of spasmodic asthma. As a rule, the complication with cardiac asthma is, I think, very generally highly unfavourable; but this is scarcely a pulmonary complication. Pulmonary tubercular complications of every kind, and at every stage, I have, in my own experience, found, as a rule, fatal to beneficial results from the use of the waters. There may be exceptions to the rule, but I have not met with them. I can recall to my memory at least three cases in private practice, all females, who came a long distance to Bath for the benefit of the waters, each crippled with rheumatism, having softened tubercle in the lung and constitutional symptoms of advanced disease. Even the occasional use of the baths increased the local lung-irritation, and also as surely aggravated the constitutional symptoms. They had much better have remained at home, and been spared the trial and consequent disappointment of the effect of the mineral waters.*

I now come to prognosis as depending upon local conditions. I think I may assert that muscular rheumatism, independent of articular affections, is the form most favourable for the exhibition of the Bath mineral waters, both internally and externally. I have already pointed out from statistics that cases under twenty are in large proportion, and probably most cases of simple muscular rheumatism are to be met with under that age or under thirty; but, even at much more advanced age, muscular rheumatism, if not entirely curable, is certainly affected by treatment so far as to be made much better. As to articular rheumatism, one must speak much less decidedly. Much depends on the conditions inside and outside the joint affected. True ankylosis (osseous), I believe, scarcely ever exists as a result of rheumatism; but fibrous ankylosis of long standing, particularly if accompanied by thickening of the capsule and loss of all movement of the tendons, connected with flexion, extension, or other movements of the joint, produces results almost quite as unfavourable for treatment by baths as complete ankylosis. The best guide in prognosis in such cases is to take into account, first, the age of the patient; secondly, the duration of the comparative immobility of the joint; thirdly, the amount of mobility which may be effected by the hands of the examiner. The position in which the joint has been allowed to become ankylosed forms also an

important ingredient in the prospects of improvement. I may here mention that a perusal of Mr. Brodhurst's work has firmly impressed me with the idea that there are numerous cases in which surgical interference, supplemented by the use of mineral baths, would be successful in restoring to joints a favourable position and sufficiently useful motion to make an useful joint.

I think my readers will fully understand from the foregoing remarks the conditions which will probably render a cure or even improvement likely to take place in any given case of arthritic rheumatism. Chronic rheumatic arthritis, once developed as a fact, is, as we all well know, a form of disease in which cure is hopeless. I mean when it has arrived at that stage in which there are "eburnation of the cartilages" and locking of the joints by osseous or fibrous deposits around the head of the bone, or rather around the circumference of the joint, if it be an enothrardial joint, as the hip. Nothing can restore the destroyed cartilages or the synovial membrane. Nevertheless, pain may be relieved, and even some slightly increased motion imparted; or, if the disease be recognised and submitted to treatment in its early stages, much may be done to prevent pathological results; and I believe that no therapeutical agents will be found more effectual in promoting this most desirable object than the timely use of thermal mineral waters, such as are to be found in Bath. I have delayed, I fear, too long on the subject of rheumatism; but many remarks which I have made will be equally applicable to other diseases usually treated by the Bath mineral waters, my remarks on which I hope I may be permitted to lay before the readers of the BRITISH MEDICAL JOURNAL on a future occasion.

[To be concluded.]

CLINICAL OBSERVATIONS ON MACULÆ ATROPHICÆ.

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STRIÆ atrophicæ or linear atrophy is a fairly common affection, and usually takes the form of white stripes or bands from one to several inches in length and about half an inch or more in width, tapering towards each end. They occur in groups, especially about the hips and thighs, and are arranged in more or less parallel curves. Their colour is peculiar, and of a glistening bluish white, resembling mother-of-pearl. The atrophied condition of the skin is more easily felt than seen; to the touch, these streaks appear like furrows depressed below the surface, while the tissues over them seem tense, dry and thin. Microscopical examination shows that this is really the case, for there is a complete atrophy of the papillary layer of the skin, and a great diminution in the vascular and fatty tissues of the part affected.

The *macular* variety of this disease is far more rare than the striated form, but it is of exactly the same nature, and presents greater facilities for studying the different stages of the disease. I have lately had under my observation a patient suffering from maculæ atrophicæ, in whom the period of its duration had extended over six or seven years, and who exhibited a large number of spots in all stages of progress and of ages varying from a few weeks to several years, so that I was well able to observe the disease in its different phases of development. In the case to which I refer, the eruption affected the skin about the upper edge of the sternum, and extended up the neck nearly as high as the cricoid cartilage. It had been developing slowly for several years, fresh spots appearing from time to time, and going through a regular series of changes, which could all be seen and studied at the same time in the same individual.

The *first* stage, which I do not find described by authors, is one which is characterised by slight redness and by well marked hypertrophy rather than atrophy, for the spots are raised above the skin and are hard and fibrous; this enlargement is soon followed by an atrophic change, and we have produced the white appearance which is so characteristic of the *second* stage of the disease. The atrophy at this period is easily seen and more easily felt; on pressing a spot with the finger, the sensation is produced of touching a pit-like scar covered by a thin membrane. The size of the largest spots in the case mentioned did not exceed a threepenny-piece, and most of them were much smaller; they were all discrete and more or less round or oval. The general effect produced by maculæ atrophicæ is very striking and quite unlike that of any other affection. This is due chiefly to the abrupt contrast in colour between the opaque bluish white spots and the surrounding healthy skin. Another point of interest that I was able to observe, in addition to that already mentioned, was a *third* or *final* stage, consisting in the obliteration of some of the oldest

* I have not yet had sufficient experience of the results in Bright's disease to enable me to form a decided opinion.