A PLEA FOR A UNIVERSAL STANDARD IN THE OBSERVATION OF THE MORBIDITY OF CHILDBED.*

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It is one of the notable signs of a real advance in obstetrics that nowadays, for purposes of statistics, and consequently for the improvement of treatment, attention is given, not merely to the rate of mortality incident upon childbirth—always a criterion of some value—but also, and more particularly, to those earlier and often slighter changes, indicated by a rising temperature and a quickening pulse, which have been grouped under the heading of morbidity. It must be admitted by all that it is the closer and more general attention to this morbidity of the childbed that has led to an earlier recognition and a more efficient treatment of those septic puerperal complications which so frequently cripple, and at times kill, the unfortunate patient. The question has therefore an important educational value.

No one who has studied the periodical reports of "maternity" hospitals in any country can rest satisfied with the present methods of observing and recording the morbidity of childbed, or with the varying standards created by individual observers, which greatly reduce the value of otherwise careful and reliable records.

For comparison of statistics, either of individuals or of hospitals, the present state of matters cannot be said to be satisfactory. One observer takes the temperature of his patients in the mouth, another in the axilla, a third in the rectum; one hospital records its temperatures at different hours or intervals of the day from another; one authority disregards the temperature of the first twenty-four hours, another includes it. The correctness of the thermometer also varies, and there is need for strict regulations as to all the precautions to be observed both by doctors and by nurses in the actual method of taking the temperature. The question of the pulse is disregarded by some and is considered very important by others, and by the latter the pulse-rate is always taken into account in estimating their morbidity. Again, abortions are included by some, excluded by others; while some hold that all deaths should be included, others that only deaths accompanied by some degree of fever should count.

All these varying conditions and methods lead us to the most difficult question of all—the unfortunate variation of the standards that have been adopted by different individuals, hospitals, or associations. To illustrate this important point I shall take four familiar standards of morbidity—the so-called Continental standard of 38° C. or 100.4° F., and the standards of the British Medical Association, the Rotunda Hospital, Dublin, and Queen Charlotte's Hospital, London.

Table of Cases taken by one Observer and Tested by these Standards.

	Primi-para.	Multi-para.	Total.
1. Queen Charlotte's Hospital*	37	7	44
2. Continental, 100.4° F. (38° C.)	26	6	32
3. Rotunda Hospital, Dublin, 99° F. (37.2° C.)† ...	14	2	16
4. British Medical Association, 100° F. (37.8° C.)‡	11	1	12

* Every temperature above 100° F. (37.8° C.) is morbid.

† When temperature after first 24 hours exceeds 99° F. and pulse 90 on three consecutive occasions, the case is morbid. Include abortions, but exclude death without fever.

‡ If the temperature reaches 100° F. on any two occasions between the second and eighth day the case is morbid. Include all deaths, but exclude abortions.

CONCLUSIONS.

Surely the foregoing considerations and these figures that so markedly demonstrate the disparity of the four standards warrant the following conclusions:

1. It is desirable to have a uniform standard for the scientific records of morbidity in the puerperium.

* Extract from a paper read at the International Obstetrical and Gynaecological Congress, Berlin, September, 1912.

2. For this only thermometers of ascertained correctness should be used.

3. The observation should always be made in one place, preferably the mouth, and extend over a fixed time.

4. The temperature should be taken at stated intervals and at the same time of the day, and the first day should be included.

5. The record should include all abortions and also all deaths with a previous morbidity.

6. Both temperature and pulse should be taken, and the lower limit in each should be fixed by resolution of the International Congress for Obstetrics and Gynaecology, and thus become a recognized, universal, uniform standard of morbidity for use in all scientific communications.

SOME REMARKS, WITH STATISTICS, ON THE TREATMENT OF 1,305 SCHOOL CHILDREN (LONDON COUNTY COUNCIL)

AT THE ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS).

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IN presenting this report on 1,305 children who passed through my hands in the special department for the treatment of London County Council school children during the nineteen months from May 27th, 1910, to December 31st, 1911, at the Royal London Ophthalmic Hospital, "Moorfields," I am conscious that the number of cases dealt with is too small to enable one to make any dogmatic assertions, but I am hopeful that, at any rate, the details may be of some interest to those concerned with the welfare of the children. The bringing together of such large numbers of children for treatment gives one most valuable opportunities for studying the wider problems of refractive errors, which errors represent the major portion of the eye defects in children—for example, the factors at work in their causation and development; the effect of environment, nutrition, feeding, study, age, heredity, etc., particularly in regard to myopia, its beginning and progress.

I propose first to deal with a few aspects of medical inspection as they occur to one engaged in treatment. I may remind the reader that, when speaking of inspection, I am only referring to the inspection for defects of vision.

First, in regard to the periods of the child's school life in which inspection takes place, these periods, so far as the London County Council scheme is concerned, are the following:

- Entrants.
- Age 8 to 9 group.
- Leavers, aged 13 to 14.
- Those cases specially referred by the school teachers.

It is group (b) that I am more particularly concerned with, and I feel strongly that instead of inspecting the children of about 8 or 9 years old, it would be of more value if they were re-examined when 6 or 7 years old, or as soon as the child is able to read the alphabet, because, although, no doubt, a few at the time of entrance inspection—namely, at 5 years old—are able to read the test types, yet the larger number cannot, and are therefore classed as "illiterates," and unless they have some obvious defect, they are passed over until the next inspection period, which, as I have said, takes place at 8 or 9 years of age. To digress a little, I might, perhaps, mention that, as a matter of fact, many children who do not know their alphabet or numerals, can be got to read some form of "illiterate" type. Personally, I am in favour of, and use the E type, which consists of a series of the letter E placed in various positions—for example, E ㄢ ㄣ ㄤ, each line or row of letters being made to correspond in size to those of the standard Snellen type. The child is given a metal letter E, painted black and mounted on a handle; after a little explanation and encouragement the child is soon got to place the mounted E, which is held in the hand, in a position corresponding to that of any letter E pointed out by the examiner on the test card. However, there is no denying the fact that this test takes some

time and patience, and would not, therefore, be generally applicable for routine inspection work.

To return to my point on the inspection of group (b), I wish to emphasize the fact that if this second inspection were carried out at 6 or 7 years of age we should then be catching squints and myopia nearer the time of their inception, or at any rate at a more favourable time than is the case if we wait until they are 8 or 9 years old, or until a time when they show some such pronounced signs of defect as squinting, or, in the case of the myope, an inability to read the blackboard from the back benches, etc. It would be better still, no doubt—certainly as regards squints—if we could have the children inspected from birth onwards, when we should get all the squints in our net at the very beginning; but I fear this ideal is at present impracticable, and would no doubt call forth much hostile criticism. Nevertheless, can it be denied that if these children were reared from birth under the careful supervision of the school doctor, with the aid of his Health and Care Committees, we should then be able to get at and remove the seeds of future constitutional weaknesses and defects before they had taken root and developed into their many evil forms—bad feeding, stuffy atmospheres, giving rise to poor nutrition and stunted growth, and laying the foundations for the development of our myopes with their weak sclerotics, or our hypermetropes with their arrested eye development?

Another matter in regard to vision inspection is the wide diversity of opinion in regard to what vision should be called "normal" and what "defective." I have found in reading through some twenty or more school medical officers' reports that $\frac{1}{12}$ vision has frequently been adopted as the dividing line, as it were, between the "defective" and the "normal"; that is to say, that all with vision of $\frac{1}{12}$ or less are sent for treatment; those with $\frac{1}{10}$ are not; or, again, if a child can get $\frac{1}{12}$ each eye, and $\frac{1}{8}$ or $\frac{1}{6}$ partly with binocular vision, then it is not sent for treatment; or all with vision of $\frac{1}{12}$ or less, together with such of those with $\frac{1}{10}$ vision as show some obvious sign or symptom of distress, are sent for treatment. Quoting from the 1910 report of the Medical Officer (Education) of the London County Council, it is there stated—page 127—that "bad defects of vision or eye diseases were recorded in 18,923 children; and further on the following comment is made: "It will be seen that these are minimal numbers, and in the case of visual defects a comparatively low standard (the italics are my own) is taken; below Standard V, for instance, visual acuity of $\frac{1}{12}$ is taken as the beginning of what is called defect," and $\frac{1}{12}$ is only called defective vision in those children who are in Standard V or VI. I freely admit that a subjective vision test in the case of children is often unsatisfactory, a child one day, for instance, reading $\frac{1}{8}$ and the next $\frac{1}{12}$, which may be due to fear, stupidity, inexperience of the examiner, malingering, or spasm of accommodation; but this cannot be held to be a valid reason for permitting a child who, when in any standard below V, reads $\frac{1}{12}$, to wait until promoted to Standard V before being sent for treatment. To me it seems entirely wrong. No doubt the visual acuity appears in some cases to increase as the child gets older, so that a child who reads $\frac{1}{12}$ when 7 years old might be found to read $\frac{1}{10}$ or $\frac{1}{8}$ when 9 or 10 years old; but I am convinced that more often this so-called improvement in the vision is merely due to greater use and development of the accommodation, enabling the hypermetrope thereby to mask his real defect; whereas in the case of the myope it is due to narrowing of the palpebral fissure and screwing up of the eyes. Then, after all, why should a new standard for normal vision be set up? Our present $\frac{1}{12}$ or standard vision is not too severe or exacting, many children being able to read $\frac{1}{12}$, or even $\frac{1}{10}$. Personally, I feel strongly that if a child cannot read $\frac{1}{12}$ and Jaeger I with each eye, then that child should have a more detailed examination; if there is any doubt about the subjective test, give the child the benefit of the doubt and have it sent to the treatment centre for further examination. It is sometimes stated that a child may read, for instance, $\frac{1}{12}$ each eye, whereas binocularly $\frac{1}{10}$ may be obtained, and this case is frequently classed as $\frac{1}{12}$ vision, and so allowed to pass as normal; but frequently this apparent binocular increase of visual acuity is again simply due to a greater effort of accommodation in the case of the hypermetrope, or in the case of a myope

a more ready adaptability in screwing the eyes up when both eyes are being used. Amongst the $\frac{1}{12}$ partly, the $\frac{1}{10}$, and the $\frac{1}{8}$ visions we shall find our early myopes, our hypermetropes and future squints. Must we wait until our myope can only read $\frac{1}{12}$ or our hypermetrope commences to squint, before we treat them? If myopia is going to be treated at all, then the sooner treatment is begun the better; treatment here does not only consist in prescribing appropriate lenses, but, what is of equal importance, also instructions about the prohibition of fine work, reading and writing at short range, etc., so that even if glasses are not at first ordered for the slighter defects, yet we can warn them and keep them under closer observation by re-examining them every six months, or until one is satisfied that no increase in the myopia is likely to take place. Then, again, many of these $\frac{1}{12}$ partly, $\frac{1}{10}$ and $\frac{1}{8}$ have considerable degrees of hypermetropia or hypermetropic astigmatism, who by accommodating are able to mask their defect, at any rate until they become older and use their eyes more for close work.

From the annual report of the London County Council Medical Officer, I find that a separate register is kept at each school, recording those cases which have had treatment, and that the school doctor re-examines these said cases at various periods, to record the result of treatment; this, of course, is a very necessary procedure, but, certainly in regard to those treatment officers who make a practice of having all their cases up again for re-examination, this means in many cases an unnecessary reduplication of work. But here I more particularly wish to refer to a certain number of cases which are re-examined and tested, not by the school doctor but by the teachers, and in some cases are referred again by them to the treatment centres either because, in their opinion, the glasses do not suit or that the child sees no better with the glasses than without them, etc. Obviously this is not a right procedure; it requires a more or less expert knowledge to pass such an opinion, for quite frequently lenses do not give better vision at first, especially if not worn constantly, and for many other reasons, the details of which I cannot enter into here. I have had several cases referred back to the treatment centre for a change of glasses in which it was stated that the teacher had tested the sight; in none of these cases was this necessary, and only had the effect of causing annoyance to the parent, who was put to the trouble and expense of taking a fruitless journey.

Finally, I am of the opinion that it is unfortunate that the card notes which are now made and kept for each child inspected are not sent, or a copy of them sent, with the child when brought up to the treatment centre, so that the treatment doctor may in all cases note for what defect the child is actually sent up. This would do away with many difficulties—for example, a child is sent because it has slight conjunctivitis; on arriving, perhaps several days later, at the treatment centre, this condition has cleared up; or, again, a child may be sent up with perfectly good vision, but it has been noted by the school inspector or teacher that the child frowns, has headache, or occasionally squints, etc.; on arriving at the treatment centre these complaints or signs are not always stated or seen, and if there is little or no refractive error, the vision is good, and the eyes otherwise appear normal, then it is only too often asked by the treatment doctor, "Why has this child been sent up?" or, on the other hand, the school doctor says, "Why is this child sent back without treatment?" If some notice were sent through the secretaries of the Care Committees, stating precisely what defect had been found and what symptoms complained of, a great deal of misunderstanding would be removed.

These will, perhaps, be considered trivial details in connexion with inspection and treatment, but I have thought well to mention them in the hope of reducing the difficulties in the stupendous undertaking of inspection and treatment of school children, and in the endeavour to correlate the work of the school doctor and the treatment doctor.

I will now briefly outline the method I adopt for re-examination of my cases. First, all myopes, in which class I include cases of mixed astigmatism, are given their full correcting lenses after careful retinoscopy, a note made of the exact refraction and the vision with correction under atropine; a note is made of the family

history, nutrition, etc., the presence or absence of any fundal or macular change, the presence or absence, and if present the size of a myopic crescent; if at the time of the first examination the case is obviously one of progressive myopia, or if there is any doubt about its being progressive, then the parent or guardian is asked to bring the child for re-examination in four months' time, also to prohibit the child in the meantime doing any reading, writing, or sewing, and warned that it would be advisable to educate the child with a view to some future occupation which does not necessitate the close application of the eyes. The higher degrees of myopia, and any that are considered to be of a progressive nature, are recommended for the Special Myope School, where a special schedule for their teaching has been drawn up by Mr. Bishop Harman. It seems that there is need for further schools or classes of this nature, as I find that there are cases recommended by me for special treatment that have not yet obtained it. In addition to this, the London County Council official, who is always present at the hospital, interviews the parent, and carefully explains the necessity and advantages of carrying out the treatment ordered, and at the same time repeats the details of treatment; a note is also made of all those cases instructed to return, and the time to return for re-examination. A notice is then sent to the secretary of the Care Committee for the district from which the child comes, repeating the above instructions, and finally a note is made in a register kept at each school by the teachers. This latter procedure to ensure the correct carrying out of treatment is, of course, adopted for all cases, whether myopes or not, if instructed to return for re-examination. All those myopes who are not considered to be of a progressive type are told to return for re-examination in six months. The parents are also warned to discourage excessive use of the eyes in close work, such as sewing or reading bad print in a poor light, and to prevent the child bending over its work with rounded shoulders, cramped chest, constricted neck, and eyes glued to the book, etc.

After the first re-examination I have all progressive myopes up again for re-examination every four or six months, and other myopes, with some exceptions, every nine or twelve months, during school life.

Hypermetropes I divide into two classes (in regard to re-examination)—namely, those of low or moderate degree with good vision, and those of the higher degrees with poor vision; the former I re-examine in one year, the latter in six or nine months.

My reasons for re-examining these hypermetropic cases in what to some may seem an unnecessarily short time are—not forgetting that we are dealing with children—because there are but few who do not very soon require the spectacle frames repaired, broken lenses replaced, or a general straightening up of the frames, together with re-centring of the lenses; this latter a most important factor when dealing with the astigmatic cases or the higher degrees of simple hypermetropia. If the time for re-examination is fixed at longer than one year, or left to the discretion of the child or parent, it then only too frequently happens that the child is not seen again; it is too long an interval to keep in touch with them; they either forget to return, break their glasses and do not trouble to get them repaired, go to some other district, or leave school. When first treatment was undertaken by the London County Council little was done about after-treatment; there was no efficient following up of the cases; so that, although I told nearly all my cases examined in the first six months to return for re-examination at varying periods up to one year, as a matter of fact only 95 out of 391 who had been ordered glasses did return by the end of the first year. Some of these absconders have since been hunted up, and it is to some extent on the experience gained in re-examining them that I was impressed with the necessity of re-examining all who had been prescribed lenses within the year, according to the plan I have previously given in detail, for the majority of these absconders either had lost their spectacles, broken them, or, in the case of some of the myopes, their defect had increased.

I am glad to say, however, that much of the difficulty in getting these children up for re-examination has now been overcome, thanks to the untiring zeal and patience of the London County Council Care Committees, so that during

last year and the present year there has been a steady increase in the number of those treated who have returned for re-examination at the scheduled time.

Of the 1,305 children under review 726 were girls and 579 boys. Their ages ranged from 4 to 14 years.

Table showing Percentage of Girls and Boys for the Respective Ages.

Age.	No. of Girls.	Percentage.	No. of Boys.	Percentage.	Total.
4	16	1.22	7	0.53	23
5	32	2.45	21	1.60	53
6	41	3.14	29	2.22	70
7	62	4.75	33	2.52	95
8	56	7.35	95	7.27	191
9	84	6.43	51	3.90	135
10	62	4.75	50	3.83	112
11	95	7.27	83	6.36	178
12	156	11.95	126	9.65	282
13	73	5.59	71	5.44	144
14	9	0.68	13	0.99	22
Total..	726		579		1,305

Of these 1,305 children sent for treatment, 1,186 had their refraction estimated, 1,118 of whom were ordered correcting lenses.

Table of Refractive Errors and Percentage of the Total Number for Each Class.

	Number.	Per Cent.
Simple hypermetropia	234	19.73
Simple hypermetropic astigmatism ...	65	5.44
Compound hypermetropic astigmatism	530	44.68
Simple myopia	90	7.58
Simple myopic astigmatism	1	0.08
Compound myopic astigmatism ...	96	8.09
Mixed astigmatism	153	12.90
Anisometropia	13	1.09
Isometropia	4	0.33
Total	1,186	—

Table showing Other Defects, either as Accompanying the above Cases of Errors of Refraction or Accounted for among the Remaining 119 Cases of the 1,305 dealt with.

Defect.	No.	Defect.	No.
Strabismus—		Corneal phlyctenules ...	6
(a) Concomitant	185	Nebulae	59
(b) Paralytic	4	Leucoma adherens... ..	3
Hyperphoria	3	Ectasia corneae	1
Ptosis—congenital	2	Irido-cyclitis	1
Nystagmus—		Cataract	6
(a) Lateral	6	Optic atrophy, secondary	2
(b) Rotatory	3	Detached retina	1
Chronic dacryocystitis	2	Retinitis pigmentosa ...	2
Conjunctivitis	68	Hereditary syphilitic choroiditis	3
Orbital cellulitis	1	Tuberculous choroiditis ...	3
Trachoma	1	Albinism	4
Chalazion	4	Phthisis bulbi	1
Blepharitis	37	Malingeringers	3
Interstitial keratitis	3	Emmetropia	14
Phlyctenular keratitis	10		

Table of Cases of Concomitant Strabismus.

There were 185 cases in all, of which 100 were girls and 85 boys; in 63, or 34.05 per cent., of these cases the squinting eye was amblyopic.

Alternating convergent strabismus	...	...	51
Right convergent strabismus	...	...	49
Left convergent strabismus	...	...	75
Alternating divergent strabismus	...	...	4
Right divergent strabismus	...	...	3
Left divergent strabismus	...	...	3

Total 185

Table of Cases of Convergent Strabismus for each Age (Number and Sex).

Age:	4	5	6	7	8	9	10	11	12	13	14	Total.
Girls ...	5	15	10	11	13	7	9	5	13	4	2	94
Boys ...	—	6	14	8	21	7	6	5	8	3	3	81
Total ...	5	21	24	19	34	14	15	10	21	7	5	175

Table of Cases of Amblyopic Squints (Number and Sex).

Age:	4	5	6	7	8	9	10	11	12	13	14	Total.
Girls ...	—	2	4	4	3	3	5	1	4	2	1	29
Boys ...	—	1	3	4	9	4	3	1	5	3	1	34
Total ...	0	3	7	8	12	7	8	2	9	5	2	63

I have also more closely analysed the myopic cases, among which I include cases of mixed astigmatism. Under this classification there were 340 cases, of which 183 were girls and 157 boys.

Table of the Myopes for each Age (Number and Sex).

Age:	4	5	6	7	8	9	10	11	12	13	14	Total.
Girls ...	—	2	4	13	24	18	14	34	45	26	3	183
Boys ...	—	—	3	8	17	8	15	29	41	30	6	157
Total ...	0	2	7	21	41	26	29	63	86	56	9	340

The number of cases recorded for age 14 is small, and is accounted for by the fact that 14 is the age at which the child may, and unfortunately generally does, leave school. The more or less progressive increase in the number of myopes for each age will be noted.

I had tabulated the schools from which these myopes were recruited, but the total number attending any one school was too small for any accurate conclusion to be drawn therefrom.

The two following tables deal respectively with the vision recorded before and after treatment in 397 cases, or all those of the 1,118 ordered glasses that returned for re-examination:

Vision before Treatment.

	LEFT EYE.							Total.
	$\frac{6}{60}$	$\frac{6}{36}$	$\frac{6}{24}$	$\frac{6}{18}$	$\frac{6}{12}$	$\frac{6}{9}$	$\frac{6}{6}$	
RIGHT EYE.								
$\frac{6}{6}$...	1	4	3	3	1	1	2	15
$\frac{6}{9}$...	2	—	1	5	9	22	4	43
$\frac{6}{12}$...	2	5	4	16	41	13	—	81
$\frac{6}{18}$...	3	7	8	31	20	2	1	72
$\frac{6}{24}$...	5	9	32	21	13	2	3	85
$\frac{6}{36}$...	4	19	18	8	4	3	1	57
$\frac{6}{60}$...	25	8	5	2	4	—	—	44
Total ...	42	52	71	86	92	43	11	397

Vision after Treatment.

	LEFT EYE.							Total.
	$\frac{6}{60}$	$\frac{6}{36}$	$\frac{6}{24}$	$\frac{6}{18}$	$\frac{6}{12}$	$\frac{6}{9}$	$\frac{6}{6}$	
RIGHT EYE.								
$\frac{6}{6}$...	2	3	1	2	10	16	93	127
$\frac{6}{9}$...	—	1	—	4	16	98	25	144
$\frac{6}{12}$...	1	—	1	10	53	15	9	89
$\frac{6}{18}$...	—	—	1	8	7	2	1	19
$\frac{6}{24}$...	—	—	2	1	1	2	2	8
$\frac{6}{36}$...	—	1	1	—	—	4	2	8
$\frac{6}{60}$...	—	—	—	—	1	1	—	2
Total ...	3	5	6	25	88	138	132	397

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TRANSITORY BIGEMINAL PULSE.

BY

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IN relation to the case of abnormal pulse rhythm described by Dr. Johnstone in the BRITISH MEDICAL JOURNAL of October 5th, it may be interesting to record the occurrence of a bigeminal pulse without any apparent cause other than the slight excitement of applying the sphygmograph.

The patient was a young man, aged 19, who had been suffering from albuminuria for more than two years; he also had enlarged glands behind his sterno-mastoids, in the axillae and left groin. The pulse was small, soft, and regular. The tension was only 97. The urine contained a few swollen renal cells, very few casts, and no crystals. With the exception of slackness he had no symptoms, and when excited showed considerable activity and would play four sets of tennis one after the other. He had no other complaint.

I saw him last on September 23rd and found his systolic tension 108 and the diastolic 60. The cardiac dullness and sounds were perfectly normal. There was still a large amount of albumen; he had several glands in the back of the neck, in the groins, and in the front of the abdomen. His pulse was quite regular, but while I was taking it it assumed a bigeminal character, as is shown by the accompanying tracings, which were taken without removing the sphygmograph from the arm.

FIG. 1.—Pulse tracing showing normal pulse and bigeminal pulse which came on while the sphygmograph was still on the arm.

It is difficult to explain the exact causation of this alteration in the pulse beat, but it gives me the impression of being due to the interference of two rhythms. We

FIG. 2.—Diagram showing increase of sound or light by coincidence of waves.

FIG. 3.—Diagram showing abolition of sound or light by interference of waves.

know that sounds or lights generally strengthen each other so as to cause a brighter light or a louder sound