

antimony salt. The increase of the ratio of the white corpuscles to the red from the very low figure of less than 1 to 1500, which is usually present in active kala-azar, to within the normal limits of from 1 in 500 to 1 in 1000 is also a very favourable sign.

*The effect on the spleen.*—The extent to which the spleen reached below the costal margin before and after the treatment is shown in column 9 of the table. Pain is occasionally felt in the spleen after the tartar emetic injections, but little change in the size of the organ appears, as a rule, until the temperature has been normal for some time. When the patients can be kept under observation for another two or three months the spleen becomes much reduced, so that instead of extending to about the navel it may nearly or even completely disappear beneath the costal margin, as in several of the cases in the table. In addition some of the patients have been seen some months after discharge from hospital with their spleens still enlarged, and at the later date it had disappeared beneath the ribs. In some, such as Nos. 16 and 17, it had receded beneath the ribs, so could not be conveniently punctured to ascertain if the parasites had disappeared. The rapid improvement, however, left no doubt in my mind on this point.

*Effect on the parasites.*—It will be observed that in the great majority of the patients the parasites were found to be absent from the spleen before the patients left hospital, although in all but No. 12 they had been found by spleen puncture before the tartar emetic treatment was commenced. The exceptions are Cases 11 and 15, who left hospital at their own request before a second spleen puncture had been made, and Case 16, whose spleen had risen to beneath the ribs, while the other cases are still under observation in hospital. This evidence completes the proof of the curative action of the drug.

*Effect on the body weight.*—The rapid gain in body weight by these emaciated subjects as soon as the fever ceases is perhaps the most remarkable and promising feature of the treatment, as shown by the figures in column 10 of the table. Thus Case 8 increased his original weight by almost exactly 50 per cent. in under four months, while Case 7 put on 31 lb. in 77 days, or 36 per cent. of her original weight. No. 12 put on 24 lb. in 37 days, while Case 17 has increased by 23½ lb. in 27 days. Bearing in mind what we have already said regarding the good prognostic significance of a great improvement in the nourishment of kala-azar patients, we regard this result of the tartar emetic treatment as one of the best proofs of its specific action in the disease.

#### *Summary of the Results.*

The following figures show briefly the results obtained in the 18 consecutive cases we have treated, which includes every case available in Captain Hume's wards during the 14 months we have used this treatment in the Calcutta European Hospital. Cases are entered as "cured" when the fever has completely ceased for two or more months, together with considerable gain in weight and a restoration of the blood, and especially of the white corpuscles, to the normal and decided diminution in the size of the spleen. This class includes 13 cases. In the two entered as "greatly improved" the temperature has been normal for several weeks, but the general condition has not yet shown that degree of improvement which we recognise as a safe sign of complete recovery. Both are still under treatment with very good prospects. Both the cases entered as "improved" left hospital at their own request before they had received adequate treatment, in one of whom full doses had not even been nearly reached, so that the method had not had a fair trial. One patient died from phthisis after the kala-azar parasite had disappeared from his spleen. The only case in which the treatment might be considered to have failed was No. 15, as the patient said he could not stand the intravenous injections, being a very nervous subject.

#### *Table of Results.*

Cured ... ..	13	...	—
Greatly improved ... ..	2	...	In hospital still.
Improved ... ..	2	...	Left hospital prematurely.
Died ... ..	1	...	Died from pulmonary phthisis.
Total ... ..	18		

When we remember the most reliable data we have regarding the mortality of kala-azar under careful and prolonged treatment—namely, the cases of my friend Mr. Dodds

Price on Assam Tea Estates, showing a mortality of 96 per cent. at the beginning of the outbreak in the Nowgong district and of 78 per cent. after the epidemic had died down in the district—the above results are so remarkable that it is difficult to find a parallel case in which such a deadly and lingering disease has been brought under complete control by a simple medicinal remedy. (In view of these results I would suggest that the use of tartar emetic appears to be worthy of further study in human trypanosomiasis and sleeping sickness in Africa.) Moreover, it has been shown by Mr. Dodds Price and the writer<sup>4</sup> that kala-azar has been completely eradicated from the tea estates of the Nowgong district (all of which are now completely freed of the disease, although it had lingered in two of them for 20 years) by the writer's segregation measures, the efficiency of which was first established before even the parasite of the disease was known.<sup>4</sup> Still further, the progress of the terrible epidemic, which carried off one-third of the inhabitants over some 200 miles of Assam south of the Brahmaputra river, has for long ceased; the segregation and other measures which I recommended in my report on kala-azar of 1897 having proved successful in dealing with the disease in the few villages which became infected in the Golaghat district to the east of Nowgong, as shown by Major T. C. McCombie Young, I. M. S., Sanitary Commissioner of Assam,<sup>5</sup> with good prospect of checking the further spread of the disease through important tea districts. This terrible disease, with its almost unequalled mortality and long-drawn-out sufferings, has thus been rendered amenable to a remarkable degree to both prophylactic and curative measures, largely as a result of the nearly continuous researches of the writer throughout the past 20 years.

*Bibliography.*—1. Brit. Med. Jour., Feb. 26th, 1916. 2. Ibid., July 31st, 1916, p. 197, and Indian Medical Gazette, October, 1915, p. 364. 3. Fevers in the Tropics, Milroy Lectures on Kala-azar. 4. Trans. Med. Chir. Soc., vol. lxxxii., 1898. 5. Indian Medical Gazette, 1914, p. 301.

## DENTAL DISEASE IN NURSING WOMEN:

A NOTE ON THE ASSOCIATION BETWEEN ORAL SEPSIS AND DEFICIENT LACTATION.

BY HAROLD WALLER, M.B., B.C. CANTAB.

THE far-reaching effects of sepsis occurring in connexion with the teeth have been so often described that it may be felt that anyone proposing to arouse fresh interest in this well-worn theme must have something entirely original to say before a hearing is deserved. While no claim to originality can be made for the contents of this article, yet it is felt there is still one aspect of the subject which has received less notice than its importance deserves. The particular effect of dental disease referred to is a general lowering of health—a result which in child-bearing women manifests itself by a failure in their power of lactation. It is at once evident that in this particular connexion the disease is capable of producing ill-effects of wider distribution than is usually included in the lists of its commonly accepted disadvantages.

To suggest that dental disease militates against successful breast-feeding is not to suggest that it is responsible for all instances in which the child fails to thrive on the breast milk. It is common for a failure of lactation to be produced in a woman, healthy in all respects, by neglect of the physiological requirements which govern the secretory tissue of the breast. The custom of suckling the infant at frequent intervals is intimately concerned with this type of failure, but it is the method and not the milk which should be blamed. Another source of error is the deduction that the milk is at fault from the restless behaviour of an over-clothed and under-ventilated child. Such mistakes are still responsible for the institution of a great deal of bottle-feeding, and must be corrected before it is possible to form any true opinion of the potential capacity of the lacteal glands. Even so, when the management of the baby and the feeding arrangements are arranged to fulfil the physiological demands of lactation as well as of infant digestion and bodily comfort, there remains a number of cases where the child fails to thrive. Dissatisfaction with the breast-feeds and vomiting are often early symptoms in the child of such a failure. The vomiting

is of an intractable type, variable from day to day, sometimes interrupting the feed, sometimes following shortly after its conclusion; at others interfering with sleep and accompanied by attacks of screaming which may last for hours. The vomiting has a tendency to be frequent, copious and forcible, and the woman rightly concludes that her milk disagrees with the child. The mother of such an infant may present a frail, unhealthy appearance, and it is not uncommon to find that the child is under-sized and that, notwithstanding the correspondence with calculated dates, the birth is thought to have occurred prematurely. In marked cases of the type under discussion there may be observed in the child a persistent blueness of the extremities, quite foreign to one whose diet and digestion are in accord. Where a record of the gain in weight is kept it will be found to proceed at an unsatisfactory rate. It may be that a child several weeks old is no heavier than at birth; or, even when allowance has been made for the reading of the midwife's scales, and they must surely be as elastic as those of fishermen, that there has been a loss of flesh. The association of so many unsatisfactory symptoms can hardly fail to attract attention. But in other instances there is nothing very striking in the woman's appearance to suggest that she is not healthy, though her infant's progress is far from satisfactory.

I have learnt to attach importance in such cases to the presence of oral sepsis in the mother, and it is well to remember that leading questions about the condition of the teeth seldom afford enlightenment. But it will be found that if inquiry is directed to the metastatic effects of oral sepsis positive evidence is given unsuspectingly. Thus, it is common to be told that the woman is rheumatic and is subject to recurrent sore-throat, that she "suffers with her head," or that she constantly wakes in the morning with a bad taste in the mouth. Attacks of neuralgia, stiff neck, swollen face, or "gumboils" are sometimes admitted. Indigestion, vomiting, loss of appetite, and a decline in weight and strength are symptoms often volunteered. Examination of the mouth suggests most strongly the probable etiology of many of these complaints. From a superficial inspection it is often obvious that good general health is incompatible with the conditions found there. Caries of long standing, dead teeth, broken roots regarded as harmless and often covered by plates, the openings of sinuses from which pus can be expressed in quantity, loose teeth with a copious discharge arising from their alveolar insertions—all these are of common occurrence. A chronically infected state of the tonsils must necessarily be added to the list. It is unfortunately common to hear that such patients have for years relied on medicinal remedies for their debility and anæmia.

Presenting greater difficulty, but often of equal importance, are the cases where elaborate architectural devices have been built up, and where the mouth contains a number of gold-crowned teeth; for despite their cleanly appearance they do not always, in point of fact, rest on sound foundations. The very form of their construction sometimes serves to imprison disease which has progressed beneath. So also may the costliness of their erection prove a serious hindrance to their alteration or removal. In such cases the knowledge of an expert and impartial dentist may have to be supplemented by skiagrams before the point can be settled.

There would be little object in thus referring to the familiar aspects of a well-known and prevalent disease were it not comparatively easy to show that its ill-effects in nursing women are not confined to the mothers themselves, but are of considerable importance to their children. The real importance of the question lies in the chance which treatment offers of effecting a sufficiently rapid improvement in a woman's health to raise her powers of lactation from a subnormal to a satisfactory level, and so of avoiding the need to rear her child by hand with all the difficulties, dangers, and expense which this process entails. If a change of such unquestioned benefit can be conferred by the removal of dental disease, a tenacious attachment to infected teeth can no longer be regarded simply as a matter of individual preference, to be respected on grounds of personal liberty. The prevalence of the condition must, on the other hand, be recognised as a very disastrous one, claiming attention on national grounds of the first importance in view of the interference it produces with the course of infant welfare. If the septic is inclined to think that too much is being made

of a trivial subject, let him notice how infrequent are digestive disturbances and intestinal disorders in breast-fed infants whose mothers are the possessors of perfect teeth.

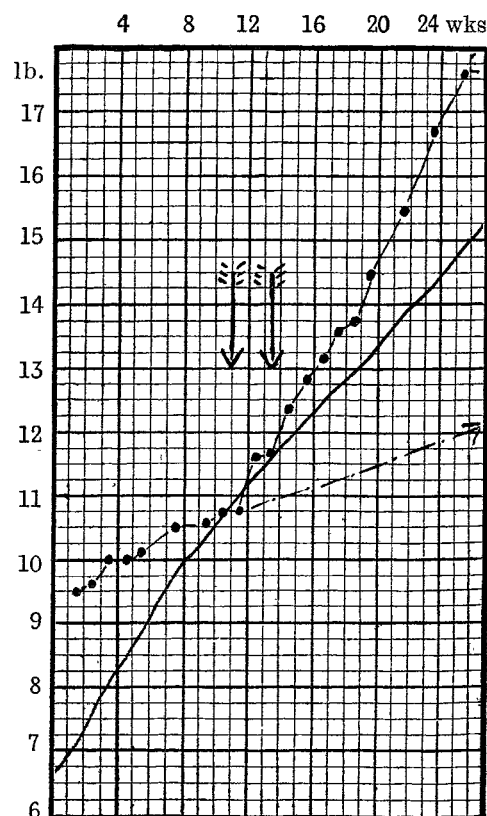
My own experience has led me to believe that if the removal of dental disease is adequately carried out, even after it has produced symptoms such as have already been mentioned, improvement in the woman's health is sufficiently rapid and substantial to be of signal benefit to her child. But for purposes of evidence a more reliable objective standard is required, and the child's rate of gain in weight provides the most trustworthy guide. Two changes should follow treatment if its effect on a woman's general health is sufficient to influence lactation: (1) the rate of gain in the child's weight should be accelerated, and (2) the length of time over which nursing can be carried out should be prolonged.<sup>1</sup> The demonstration of these two results, either separately or in conjunction with one another, is necessary to substantiate the claim to importance which has been made. They will be reinforced if accompanied by other symptoms in the child of a more satisfactory diet, such, for example, as the cessation of vomiting and willingness to sleep for long intervals between the meals. The mother should also become aware of an increase in the flow of milk. Three cases exemplifying these features will be described.

CASE 1.—The second child of a woman, aged 21, was brought to an infants' consultation at the age of two weeks. The child was above the average in weight and looked healthy. The

mother was of frail appearance with a sallow complexion, and in manner anxious and overwrought. She complained of loss of appetite, pains in the head, and inability to sleep. Her first child had been breast-fed for 10 months with success. The second was also being suckled, but cried unduly and vomited the milk from time to time. An unhealthy condition was present in the woman's mouth; above the broken stump of an upper incisor was the opening of a sinus from which pus escaped freely on pressure. The scars of other openings were visible above the position of a tooth which had been broken and over which the gum had united. The removal of the defective teeth was urged, but

arrangements for this could not be made for several weeks. Meanwhile the child's gain in weight became unsatisfactory. Reference to Chart 1 will show that by the end of the twelfth week he had lost the initial advantage which he held over the average child at birth. The mother's health was visibly deteriorating, and with lack of sleep and the

CHART 1.



Case 1.—Weight curve of child. The continuous line is Budin's curve. The interrupted line gives the record of the child's weight. The arrows denote the extraction of maternal teeth: three in the first case, two in the second. The direction of the interrupted line before the extraction would lead to a weight of 14 lb. at one year, after the extraction to one of 22 lb.

<sup>1</sup> In Budin's curve we have a standard which may conveniently be used for the first point in providing an average rate of progress in a child's weight during the first year of life. The normal period of lactation is not easy to fix; as Forsyth has shown, it depends to a large extent on tradition. In one of the cases quoted later it will be noticed that the orthodox period of eight months is exceeded. All this means is that the child was spared for longer the necessity of drinking cow's milk—a fact that can scarcely be stigmatised as "unnatural."

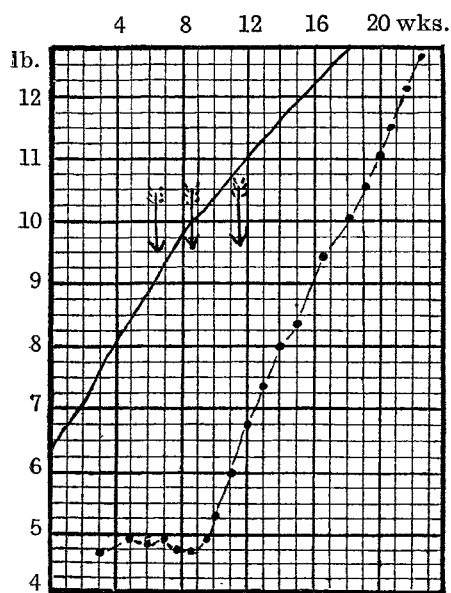
continued fretfulness of her infant she had become depressed and careworn. The prospects of successful breast-feeding had begun to appear altogether unfavourable, and the child to show a definite aversion to the breast milk, when she attended for dental treatment at the London Hospital. Three teeth were extracted when the child was 11 weeks old and two a fortnight later, the mouth healing quickly. Improvement in the health of both mother and child followed at once and the weight curve is seen to rise. Test meals were taken on several different occasions. Before removal of the teeth the child was found to gain 4 oz. in weight in the course of each of three meals. At weekly intervals from the fifteenth week the weights registered at the feeds were 8, 7½, 7½, 8, 6¾, 8½ oz., and at the twenty-sixth week 10 oz., by which time the weight was 2½ lb. above the average calculated by Budin's curve. The infant's progress was almost uninterrupted up to the age of a year. Breast-feeding was discontinued during an attack of varicella at the eleventh month, and half-a-pint of cow's milk given instead, with a diet of mixed food.

It is interesting, and perhaps not unduly fanciful, to speculate on the alternatives to this course. To start with, her own teeth were almost the only thing the woman had not thought of blaming for her baby's misdemeanours, so that she would not instinctively have sought the right treatment, in which case it is scarcely conceivable that by means of breast-feeding she would have succeeded in keeping the child in health. Had the baby continued to gain in weight at about the same rate as that recorded during the first three months the curve would have reached at 12 months a height approximately of 14 lb. The actual weight at that age was 22 lb., representing a gain of 8 lb., or more than a third of the total body weight. Much more probably bottle-feeding would have been installed about the fourth month, a plan associated with much risk in this particular household, but inevitable, if the powers of lactation continued to decline. The mother's health, meanwhile, would have been left to fare as best it could.

Failure of lactation in this kind of case is often attributed to the woman's lack of food, and doubtless there are instances in which it is true; but the appearance which gives rise to the diagnosis of starvation is, in reality, more commonly produced by toxæmia, followed by failure to assimilate food and loss of flesh. To increase the food-supply alone is of little or no use. Removal of the cause of ill-health will often show, on the other hand, as in the above instance, that the available food-supply was adequate in the absence of sepsis.

CASE 2.—The first-born child of a woman aged 29, whose health was poor during the first three months of pregnancy,

CHART 2.



Case 2.—Weight curve of child. Lines as before. The arrows indicate the extraction of eight teeth, twelve teeth and four roots, and eight teeth respectively.

escaping from the breasts between the feeds. The child vomited frequently, sometimes when feeding, and sometimes at the end of the meal. On other occasions the milk would be retained for an hour or more and then be forcibly rejected.

Intervals of three and four days elapsed between the action of the bowels. Alterations in the hours of feeding were made until treatment could be arranged in the dental department, but they produced no improvement. The dentist reported that nothing less than radical extraction of every tooth could hope to affect the grave sepsis which was present. The gums were swollen and in some places almost covered the crowns of the teeth, many of which were loose, with pus oozing round them. Caries had long since wrought havoc throughout the mouth and a number of sinuses existed. The patient agreed to the proposal and the dates of the extractions are entered on Chart 2. The child's vomiting ceased almost at once, a daily movement of the bowels was established, and a steady gain in weight followed. Despite her edentulous condition, which made eating difficult, a marked improvement in the mother's health also took place. It is interesting to note that the child did not gain weight until the majority of the teeth had been extracted. Within a few weeks the child's skin improved in colour and the extremities lost their abnormal purple tint. The weight, which had been almost stationary at 5 lb. from the third to the tenth week, rose to 10 lb. between the tenth and eighteenth week.

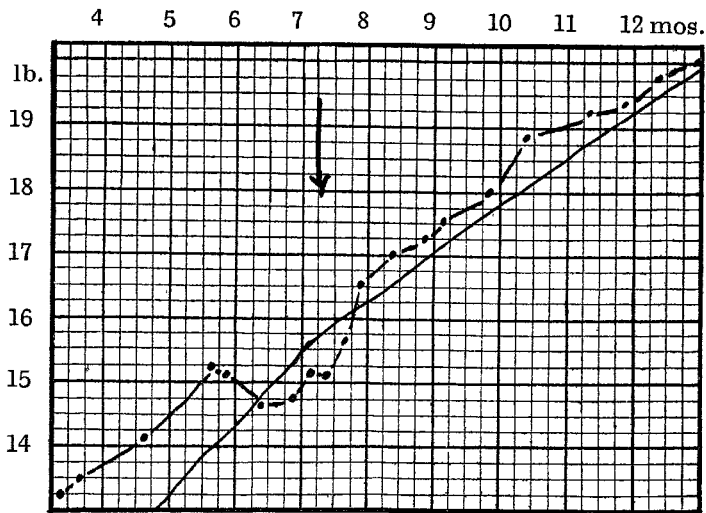
In this instance it is significant that the milk was not deficient in quantity before the teeth were removed. But the child's vomiting was not caused by taking excessive amounts, for the plan was tried of allowing short feeds of a few minutes only. The milk was still vomited. Moreover, extraction of the teeth could not be expected to lessen the flow, yet vomiting ceased with the diminution in the sepsis. The presence of organisms in the milk was suspected, but cultural examination disproved this. It must be presumed that the milk was rejected on account of some toxic properties, and the details given will serve to emphasise how closely the infant's behaviour resembles that seen in cases of obstruction due to spasmodic closure of the pylorus. The apparent paradox of a child starving itself to death in the presence of a copious supply of its mother's milk is rendered clear if it can be proved that the food contains some virulently toxic substance. Oral sepsis in the mother is not, so far as I am aware, at all frequently suspected as the underlying cause of such misdemeanours in the baby. There is a passage in Still's writing<sup>2</sup> which seems to apply very accurately to the kind of case under discussion: "Sometimes where the infant was wasting considerably in spite of an ample supply of milk, I have found that as far as ordinary analysis could show the milk was perfectly good; nevertheless the substitution of hand-feeding, partly or entirely, has been followed by immediate improvement. I have no explanation to offer for this occurrence, but it suggests that there are subtler constituents in milk than proteid, fat, and sugar." Some source of toxæmia such as is here suggested would appear to supply an explanation of the symptoms as well as of the improvement which followed a change in the milk-supply.

CASE 3.—A woman, aged 37, sought advice about her seventh child, aged 14 weeks. All the other six were alive. They had been difficult to rear, for breast-feeding had never been successful for more than three months. The majority had required artificial feeding during the second month. One had been hand-reared from birth. Questions elicited the following facts. During the lying-in period the milk was always plentiful after all her confinements, but within a few weeks the child habitually preferred the left breast to the right. The "draught" gradually ceased to be felt on the right side, and suckling was continued from the left side only. At or about the sixth week the left breast would fail to satisfy the child's needs and would be supplemented by bottle-feeds. This measure was always followed by the complete failure of lactation. This, or slight variations of it, is an extremely common sequence of events, though its mention is usually withheld. The left side is preferred by the child because it is habitually carried on the left arm, and is awkwardly held by the right. The right breast ceases to secrete from lack of regular stimulation; the left fails from being overtaxed. In this instance the woman was advised to use both breasts at each feed, making the child take the right before the left. A small quantity of cow's milk was ordered after each feed to ensure the child's satisfaction and so enable a proper interval to elapse between the meals. The plan was adopted with considerable scepticism, but a week later came the report that the "draught" was again felt in the right breast. After a fortnight the supplementary feeding was discontinued and the rate of gain in weight proceeded satisfactorily until the child was five and a half months old. (Chart 3.) At this point lactation showed signs of failing. The rate of gain ceased and a loss of weight occurred. The

<sup>2</sup> Common Disorders of Children, 1910, p. 21.

breast-feeds gave less satisfaction, and the infant awoke in the night and demanded a meal when previously he had slept peacefully. The mother complaining of headaches, neuralgia, and indigestion, declared the tax of suckling was beyond her powers. After some discussion she now agreed to take the advice given at the first visit

CHART 3.



Case 3.—Weight curve of child. Lines as before. The arrow indicates the extraction of six maternal teeth.

and had six badly diseased teeth extracted. Her health improved conspicuously, and her regrets at having delayed treatment were as sincere as her previous assertion that she was perfectly well. The child continued to thrive, obtained from the breast all the milk he required and was weaned at the age of 14 months. He could walk without support before he was 10 months old, an achievement which had not been reached by any of the other six before the age of 16 months.

In the above example the need for artificial feeding was first threatened as the result of mismanagement when the child was about four months old; it appeared to be again called for at the seventh month on account of the woman's ill-health. The part played by the first factor in the previous failures of lactation was presumably the same. It is not possible to say anything about the effect of oral sepsis on the mother's health; it appeared to be of long standing.

The cases selected as illustrations have been chosen from nearly 200 in which the presence of dental sepsis interfered with the power of nursing an infant. Improvement capable of registration was achieved in 80 per cent.; in the remainder opportunities for recording its effects did not occur—some were lost sight of, and some did not complete the treatment. To the suggestion that herein lies the cause of many instances of the failure of lactation there are drawbacks, not the least being the heavy burden of responsibility which this disease has been asked to carry. Considerable disagreement is apt to occur in discussions which attempt to fix the point at which disease of the teeth is related to disorders in other parts of the body. Yet there seems no way to avoid the conclusion that to its other disadvantages must be added that of playing a very disastrous part in vitiating the course of breast-feeding.

The somewhat elaborate description of the cases will, it is hoped, be excused in view of the difficulty of isolating the essential points of the subject. It follows from what has been said that the earlier treatment is obtained the better. It is difficult to suppose that a condition which can influence a child so profoundly through its parent after birth, can fail to exert effects during intra-uterine life. Research into the association between dental disease and the occurrence of miscarriage and the birth of premature children of weakly physique might well produce important results. It might be hazarded that the appointment of a dental surgeon to the staff of every maternity hospital would greatly increase the utility of these institutions.

The opportunity to present the subject in its present form was intimately dependent on the diagnostic and operative skill of the dentist. Mr. H. C. Highton has devoted his time in the most ungrudging manner to this investigation, and the results quoted bear their own testimony to both his judgment and ability.

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## MASSAGE AND MEDICAL ELECTRICITY IN THE AFTER-TREATMENT OF CONVALESCENT SOLDIERS.

ACCOUNT OF THE MECHANO- AND ELECTRO-THERAPEUTICAL DEPARTMENTS AT THE COMMAND DEPÔTS AND CONVALESCENT CAMPS.

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WHEN the medical history of the war comes to be written the Director-General's scheme for the establishment of Convalescent Camps, where the work of the general military hospitals can be completed and large numbers of men restored to the fighting service, will be ranked at its full value. That it has not received its full recognition up to the present is due to the quiet and gradual way in which the whole scheme of after-treatment has been set on foot. The public might be led to suppose from the articles which have lately appeared in the lay press that we in this country have very little in the shape of an organised scheme for the after-treatment of our convalescent soldiers, and even in quarters which might be expected to have the fullest information there seems to be a disposition to magnify French achievements rather at the expense of our own. Thus in the report of the Special Committee of the Balneological Section of the Royal Society of Medicine appointed to consider the treatment of disabled soldiers by physical remedies there appears the following statement:—

Up to the present time physical remedies have not been used with the same thoroughness and precision as in France. In England heat, moist and dry, massage, and electricity are, of course, used throughout the country, and in a few cases baths and mechanical movements are being added. What is wanted is a combination and association of these powerful agencies under skilled direction. We think that a clear case has been made for the introduction of physical treatment upon an adequate scale into this country for the benefit of disabled and discharged soldiers. It is true that the *eau courante* bath of the French or the analogous whirlpool bath used in England has been adopted in some British hospitals. This, however, is but a single item in the treatment to which we refer, although its adoption may be regarded as a tacit admission of the good results that are being obtained by our French and Belgian allies.

Such a statement is misleading in that it passes over as practically non-existent the splendid work of the Command Depôts and Convalescent Camps, chiefly because the *eau courante* bath has not been installed broadcast. After all, this mode of application is still in its infancy, and while one is always anxious to test any new and improved methods of treatment, it will be very interesting, to say the least, to have the views of the medical profession two years hence on the efficacy of the *eau courante*, now very much on its trial, when compared with ionisation, radiant heat, diathermy, and massage in the treatment of ankylosis and similar conditions. It is noteworthy, however, in this connexion, that in recent statistics published by the War Office of men returned fit to their units from the Command Depôts, Randalstown heads the list. Owing to the very imperfect water-supply it has been found impracticable to install any form of hydrotherapy at Randalstown, and, therefore, only these latter time-honoured methods of treatment have been available.

The physical and electrical treatment of convalescent soldiers is by no means so lacking in coördination and skilled direction as certain criticisms might lead one to infer. It is necessary to be actually at work in the camps in order to appreciate how thoroughgoing a system it is which is being set up; but even a casual visitor would find it a revelation were he to go to any of the camps (say the one at Epsom, which is the most accessible from London) and watch the work carried on any morning or afternoon inside the massage and electrical department.

### *The Convalescent Hospital Camps.*

Before the first six months of the war were over it became apparent to the Director-General that a great number of men were being discharged from military and Red Cross hospitals who, on account of stiff joints or injured nerves, were unable to return to duty, although they no longer required hospital treatment. These men were at first given extended leave at home, and were dealt with in out-patient departments