they are in principle wrong, and in practice unnecessary. So also of tenotomies in either deformity. Osteotomies and resections I can only regard as unwarrantable mutilations.

TIMES OF SOLDIERS' MEALS.

By J. HICKMAN,
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At present the usual hours for soldiers' meals are: breakfast, 8 A.M.; dinner, 1 P.M.; tea, 4.30 or 5 P.M. The early morning parades are generally about 6 or 6.30, or in summer may be at 5—that is, men coming in late at night are turned out to parade without having had anything to eat. Even considered from the point of view of discipline this practice is to be deprecated; men having partaken of some nourishment, any way a cup of coffee, are in a better humour with themselves and their superiors, and insubordination, absence, and lateness at parades will be found to sensibly diminish. Many go so far as to advocate a regular meal at the time of rising, but it is generally accepted that light refreshment is sufficient to maintain the equilibrium till the breakfast time; hot coffee with plenty of milk may be advised; it is a stimulant to the system, invigorating without depressing. The cooking to provide a full meal could hardly be managed; two good meals are sufficient in the day, and if a hearty breakfast were taken too soon, the interval between it and the other meal would be too great; the work intervening is only an hour's parade, after which breakfast can be taken with leisure and appetite. The morning parade work should not be excessive; no fatiguing duties should be undertaken, as much unaccustomed exercise is likely to be followed by languor through the day. In cold or rainy weather this food before leaving the barrack-room should be specially insisted on. In every campaign, before starting the day's work or march, the rules lay down that soup, erbswurst, or coffee is to be issued. In India early rising is universal, and the habit is generally adopted; on the march the coffee-shop is an institution, and the men avail themselves eagerly of it. It is the universal opinion of medical men abroad that in places where malarious fevers are prevalent the susceptibility to their influence is much increased by starting for the day without food.

In the Aldershot cavalry barracks the men can get a good cup of coffee and a bun for a penny, and a cup of Moore's cocoa and milk, or a tumbler of milk and a biscuit, could be sold for less probably.

This early issue of refreshment should not be dependent on the caprice or wish of the regimental authorities, or on the pocket of the soldier; it should be embodied in the Queen's Regulations that no morning work should be commenced without an attempt to restore the waste of the body during fasting and sleep.

Breakfast only wants a few words; no alteration in the hour can be suggested. According to Dr. Edward Smith the daily distribution of food, supposing a physiological diet of 4,300 grains of carbon with 200 grains of nitrogen be taken, should be:

	C.	N.
For breakfast	1,500	70
For dinner	1,800	90
For supper	1,000	40
	4,300	200

or the total daily food should be distributed amongst them by allotting three parts to the first, four to the second, and two to the third. When dinner is eaten late 4-9ths of the supply may be eaten then and half that quantity at luncheon.

This division would assume that the system requires meat twice a day, to cover the wear and tear and to supply nitrogen, and to produce the highest state of health in the adult. In the recruit whose muscles are developing, and whose actual and reserved energy it is proposed to increase, the bodily waste is far more active, and he requires nitrogenous food twice a day, at breakfast and at midday dinner, and on no account in the after part of the day. In nitrogenous food is comprised fish, bacon, sausage, eggs, etc., with any of which breakfast can be varied.

It need hardly be said that breakfast should be a substantial meal; the digestion early in the day is active, and the work of the day is to follow. Cocoa, milk, hominy, or oatmeal porridge are amongst the best articles; the unsuccessful efforts to introduce into household use "wholemeal" (not simply bran) bread might be renewed and enforced in soldiers' diet.

Now, as to the time for dinner. It is generally assumed that an

ordinary meal is, in a healthy man, completely digested and passed out of the stomach in about four hours. Then, if we add a period of two hours for rest to the stomach, food would appear to be required at intervals of six hours. This is what experience teaches, and what is practically adopted. Sleep means a great diminution of bodily activity, and this greater interval can be accounted for. Breakfast being taken at 8, the midday meal should be ready at about 1, the time chosen by working men and the middle class generally, in schools, prisons, and all institutions. It is laid down that the chief meal of the day, the full meal (by whatever name it is called) should be taken at any hour when active occupation, bodily and mental, can be suspended for from one hour and a half to two hours; in other words, it is not found conducive to health to take a full meal in the midst of the day's work. This does not seem to agree with the popular habit. If soldiers had their dinners late, after they had finished their duties, they would probably remain more in barracks. The question of late dinners for shop-people and clerks has been elaborately argued by Dr. Dobell in a circular addressed to employers of labour, 1852. In the case of the soldier the suggestion may raise a smile, but is worthy of consideration.

Except fatigues, punishment drills, or guard occurring at intervals, the duty of the foot soldier after dinner consists of only an hour's parade, and old soldiers are even exempt from this. In the mounted branches, stables have to be attended, and many other duties may present themselves. If the present agitation for the "square" meal in the afternoon can be justified by the proportion of afternoon work, the mounted corps will surely have a primary claim to this indulgence. The thing to be remembered is to allow time for rest before and after the meal, and the afternoon drill should be delayed to further this object. To recapitulate: to those whose physical powers have been taxed the short perfect rest before is to be recommended; and when the dinner is finished at least an hour should be given to physical tranquillity. After this hour gastric digestion will be established, and the blood and nervous energy employed in the process will no longer be required, and can be devoted to another form of animal force.

In practice, no doubt, work immediately after a meal interferes with digestion, but this only applies to hard work, and most of the working classes can secure a quiet hour for the enjoyment of their dinner. Tea is taken at from 4 to 5 P.M. It really requires little comment. Perhaps the hour is too early, and makes the interval between it and breakfast too long. If delayed later, it would deprive the soldier of his evening walk, and the change would be received with grumbling. It can be urged, while the soldier carries into the army the hours of eating of the working classes in his other meals, in his tea and supper he anticipates his former habits by several hours; it really adds to the necessity of further nourishment before turning in, as going to bed with an empty stomach is to be avoided. Coffee or tea, with bread and butter, lettuce, onions, watercress, or other light things, which are wholesome, and are better and more economical than meat; this is merely added in case the purchase of meat should be made by the soldier. Meat teas are not to be commended; tea is not adapted to accompany meat in the digestion, and is very likely to cause dyspeptic troubles. In many instances the hungry recruit has eaten his portion of bread for his breakfast, and there is absolutely nothing left for his supper. A modification of the rules for issuing bread seems imperatively required. We are led to conclude that the hour of dinner is, like the laws of the Medes and Persians, unalterable, though it might be a little later. As regards supper, in an economic and scientific point of view, it certainly should be postponed for another hour or two. On service, in camps of exercise, or foreign stations generally, where the outside amusements of the soldier are few, the change could be made with advantage.

After 5 o'clock meal the regulations do not provide any more for the soldier, who, as long as he has money in his pocket, generally gets something at the regimental canteen or recreation room bar; this is merely private expenditure, with which no interference can be made. The question naturally arises whether this absolutely necessary amount of nourishment should be dependent on such fleeting and precarious finances.

In the beginning of this paper the dangers of a long fast were insisted on, especially in the case of growing lads. They are too exhausted to sleep comfortably, to rise with vigour, or to enjoy breakfast. The system is weakened and the digestive powers not ready when called upon, or there is a temptation to ravenous haste. The remedy for this is the issue of soup from the cook-house between certain hours in the evening. This basin of soup

and a piece of bread is a sufficient meal in itself, and should be available for nothing to every man who applies for it. The soup can be made from the large bones of the rations; the sale of the refuse will generally be found to cover the cost of the vegetables, split peas, and flour required to complete the soup. This has been adopted in some regiments, and it is found that the applicants for the soup are usually those whose finances are low, and on the days immediately before the pay-day, there is often a difficulty in supplying the numbers. There is naturally a greater demand in the winter. The universal adoption of this plan cannot be too strongly recommended.

A few words as to the times spirit rations should be issued; they are best taken with meals—at dinner time preferably, never before. This is not the place to discuss the merits or the action of alcohol; in small quantities it increases the secretion of the gastric juice and the movements of the stomach, and thus aids digestion. Alcohol should be taken, largely diluted with water, with, or rather at the close of, a meal. In Queen's Regulations, Sect. xv, Para. 103, it is laid down that malt liquor may be taken from the canteen to the barrack rooms for the men's consumption at dinner; this privilege is, however, not acknowledged by all commanding officers and its observance should be universally insisted on.

AFTER-HISTORY OF PNEUMONIA THE GUIDE TO ITS TREATMENT.

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I WISH in this paper to give my experience of the imperfect as well as the complete recoveries of my cases of pneumonia during a period of over twenty years. I have never seen its therapeutics discussed from the consideration of the after-history of cases of this disease. I will not, therefore, in this paper discuss the lessons taught me by my fatal cases, but confine my remarks to those that recovered. These observations are founded on 213 cases of all grades of severity of single and double pneumonia, at ages varying from 15 to 73; and by pneumonia I mean croupous pneumonia, characterised by rusty sputa and consolidation afterwards. I was able to trace the after-history of 155 of my cases. Most of them were of the artisan class; some came under my care subsequently for other ailments, some for entrance examination into benefit societies, and I always made it a routine rule to examine the chests of all my cases whenever I could afterwards. Of these 155 cases, I found rather above half—namely, 81—free from any traces of their pneumonia on examination at periods not under two years afterwards. The other 74 had traces left discoverable by finding dulness of the affected region of greater or less extent and degree, indicating impaired lung, and were very frequently ill; 13 of them died of phthisis afterwards.

During my first years of practice my treatment was mainly expectant. I thought and had been taught that pneumonia had a definite course; that drugs could not alter its natural history, and, beyond stimulating the old, rest in bed, a warm poultice, and any sort of a placebo mixture was treatment enough. Symptoms, on an average, subsided on the eleventh day; convalescence seemed established, and expectancy triumphant. Any prolonged debility afterwards was put down to insufficient means, imperfect hygienic surroundings, or to the generally below-par state of health of many operatives living in towns. But I began to wonder if expectancy were the best treatment when I found so many whom I had so treated so frequently ill afterwards. The chief symptoms were slight cough and expectoration, inability to work as well as formerly, a constant sense of slight weariness, and in nearly every case a feeling of flatulent distension and weight after meals, and a varying amount of anorexia. Though the body might be fairly well nourished, yet the face was too thin proportionately to the body, and wore an expression of considerable depression; the bowels usually torpid; the tongue furred, and especially indented with teethmarks. On closer inquiry I found that for three or four months following the attack of pneumonia these patients got on fairly well, but after then began to droop and never felt up to the mark; and with this chain of symptoms I always found evidences of unresolved pneumonia. I then began to try other measures to prevent these after-consequences if I could. With this view some were treated by quinine in large doses—now we would say in antipyretic doses—by aconite, by ammonia, and by antimony.

Thus, of the 74 cases of unresolved consolidation, 29 were treated by pure expectancy, 20 by ammonia, 10 by quinine in full doses, 7 by aconite, and 8 by antimony in largish doses of its tartrate.

I wish to say a few words on each of these methods of treatment. My experience of aconite in doses to produce any effect is against its use at all in pneumonia, as I feel sure it increases the danger of, and often actually causes, cardiac collapse. The ammonia treatment seemed much the same as the expectant, except that I thought there was more pain in the side during its use. Quinine appeared not so risky as aconite, but just as inefficient to control the disease, even in doses large enough to lower the temperature for a time. My limited experience of it only corroborates the American estimate of its value. On the other side of the Atlantic it has been most extensively used, and last year there was a discussion in the New York Academy of Medicine on the subject. There was a general consensus of opinion upon the inutility of quinine as an antipyretic in the treatment of pneumonia. It was considered useless in small doses, and dangerous in large ones, producing cardiac and nervous depression. My impression very strongly is that any treatment directed to lower the temperature only is bad. But if a remedy is to be had that is able to lower the temperature for a time in a marked degree, surely some will say it must do good. Well, kairin is able to do this; and in the JOURNAL for January 28th there is a record of the antipyretic treatment *in excelsis* so instructive that I wish to quote it before leaving this portion of my subject:

"At first kairin was used in 10-grain doses, and it was always given when the temperature was 104° and over. After each dose the temperature fell rapidly; observations made every quarter of an hour showed that the fall was continuous for about two hours, the total fall being from 3° to 5°. There was a striking constancy in the effects produced by a given dose of kairin, whether the dose was 5, 10, or 15 grains. A dose of 10 grains always gave the best results; 15 grains did no more than 5 grains, and neither did so much good as 10 grains. The stationary period varied, but at most it lasted only a few hours; the longest time recorded was ten hours. The subsequent rise of temperature was as rapid usually as the decline. Each dose of kairin was followed within half an hour by profuse sweating and symptoms of depression, and when two doses were given in close succession (the interval being three hours and a half) marked cyanosis and collapse occurred. Kairin was exhibited twice daily for ten days; on the fourteenth day of the disease the maximum temperature was still 105°."

I wonder how many of us on reading this report of a case of pneumonia rubbed our eyes and thought what blows the pyrexia got even till the patient was black in the face. I wonder also how many were surprised to read further on that the patient died of phthisis ten months afterwards. My opinion is that he treats pneumonia best who, after having the lowest percentage of deaths, has the fewest cases of consolidation afterwards. First, because it diminishes the risk of tuberculosis. Observers like von Brunn, Siegel, and many others make it apparent that the tubercle bacillus finds its best nidus in old inflammatory products. Secondly, the condition of impaired health that too often follows even apparently good recoveries from pneumonia and the dyspepsia which, I believe, is constantly associated with and evidence of incompletely resolved pneumonias, press home this view of the aim of treatment.

My first cases treated with antimony gave better results proportionately than by the other plans of treatment, so that I was led to continue its use further. After a while many reasons led me to prefer small doses frequently repeated to the larger, more knock-down doses recommended by the older writers. These small doses are well borne even by the old. I found ʒi grain given every hour for young adults, less frequently for older people, a dose quite large enough. When pain, cough, and chest oppression are relieved, the remedy may be given less often. I continued the use of the drug for several days, often a week, after the temperature had fallen to normal, to ensure removal of the inflammatory products remaining behind. There were no ill effects from the drug used in this dosage, no sickness, no diarrhoea; its action seemed to be simply that of a respiratory sedative. Generally a little tincture of camphor was given with it to ease pain.

Of the 81 cases in which no traces of mischief were to be detected afterwards, no fewer than 65 were treated in this manner. At first I had a dread of cardiac failure, but this, as time went on, grew less and less, as I found these small doses, by easing the strain of respiration, seemed to diminish the danger of sudden heart failure. Moreover, the recoveries seemed, as it were, to be