of identity is still wanting, and the inability to obtain definite cultures of rickettsia bodies up to the present hinders further advance in this direction.

CONCLUSIONS.

1. The constant presence, after a suitable lapse of time, of rickettsia bodies in lice which have been fed on a trench fever patient has been confirmed.

2. The absence of rickettsia bodies from lice bred in captivity and fed only on healthy men has been shown by our work, in contradistinction to observations made on the Continent where the population is much more exposed to infection and a clean stock of lice is more difficult to procure than in this country.

3. A very close correlation has been shown to exist between the presence of rickettsia bodies in lice or the excreta of lice and the virulence of these materials when inoculated into men.

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THE WORK OF A DEPARTMENT FOR EMPLOYING EXPECTANT MOTHERS IN A MUNITION FACTORY.

(Preliminary Report.)

BY

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THE question of the employment of the working woman who becomes pregnant has always been a vexed one. Opinions have varied from that which considered a woman in this condition should not be employed at all to that which would afford no consideration whatever to a woman supporting the added strain of a pregnancy.

Since the outbreak of the present war the numbers of married women of child-bearing age who have entered into industrial employment have steadily increased. These women have in the large majority of cases entered factory employment in order to earn money for the adequate maintenance of themselves and their children, and as time goes on the need for their earnings has become more and more evident. They cannot without serious hardship to themselves and their children relinquish their earned weekly wages. A woman factory employee who becomes pregnant still more has need of her earnings to maintain her own nourishment and that of the developing fetus, and also to make adequate preparation for the inevitable expense entailed by the arrival of a new baby into the family.

Apart from the necessity for engaging in well-paid work experienced by these women, various industries have discovered that these married women are valuable servants, who are reliable workers in different processes and who cannot always be replaced by satisfactory substitutes if they leave work.

Up to a recent date there has been no fixed routine of procedure in dealing with women factory employees who have become pregnant. In some instances the condition has been ignored and the woman has been allowed to work at any process as long as she has wished to do so without any regard to the suitability of the work upon which she is engaged. In other cases the custom has been to dismiss an expectant mother directly her condition becomes apparent regardless of the question of her ability to work to a later date.

There has been in the past too little inclination to look on the question from the point of view that most factory workers when pregnant are still physically fit to undertake paid work and that they are in need of their earnings to maintain their fitness.

In carrying out the routine medical examination of women engaged on various engineering processes connected with shell, fuse, and gun manufacture, one of the writers became greatly impressed, first, with the number of women who were at work which was unsuitable while hiding their condition to avoid dismissal at the fourth month of pregnancy, and secondly, with the amount of illness of short duration among the workers which might be suspected to be due to miscarriage in the early weeks of pregnancy, although confirmation of this suspicion could in many cases not be obtained.

On going into the reasons, both these conditions appeared to result from one root cause—namely, the anxiety on the part of the women to retain their work and their earnings. If the pregnancy miscarried they were relieved of the necessity of ceasing work, and if it went on to term, then they did all in their power to conceal the true state of affairs, even though it entailed the performing of much unsuitable work.

One of the writers thereupon approached various employers to see whether suitable work could be given to expectant mothers, and was met with a flat refusal to undertake any such thing, on the grounds that their employment would lead to loss of money by the employer, and that it was unseemly for an obviously pregnant woman to be seen by other employees.

Thereupon the writer approached the Factory Inspection Department of the Home Office to ask whether it would establish a central workroom for the district for some needed war industry at which these women could be given employment. This department, while approving of the idea if started by private enterprise, refused to initiate such a scheme.

Finally, a copy of the letter sent to the Home Office was sent to Major C. P. J. Ovens, the superintendent of the National Ordnance Factories, Leeds, with a request that this group of factories should initiate a scheme to deal with cases of pregnancy occurring among its own workers. This request was seriously considered by the management and an experimental scheme was drawn up by the writers with the active co-operation of the superintendent, to deal with cases of pregnancy up to the birth of the child.

The regulations and terms of employment of these women were discussed with their trades union representative, and were also brought before a meeting of the workers' representatives. It was entirely approved by these women, who had an extremely broad-minded outlook on the whole question, and were able to give valuable opinions on various details of the scheme from the workers' point of view.

The prematernity scheme was opened for the transfer of women in April, 1918, and has worked without any administrative hitch since that date. The women themselves apply at each factory to their welfare supervisor to be enrolled for employment under the scheme. They fill in a form of application, and sign an agreement to accept the wages offered for this class of work. This form is forwarded to the lady superintendent in charge of the scheme, who notifies the factory medical officer of the applications. The factory medical officer examines all applicants as soon as possible, and sends in a report upon them as to date and number of pregnancy, date of expected labour, complications if any, and the grade or work for which they are then suitable, and the desirable dates for transfer to lighter work. From this tabulated list of applicants the lady superintendent of the scheme is able to transfer women to their special work as they become eligible provided there is a vacancy by the delivery of women further advanced in pregnancy working under the scheme.

As regards the choice of work, women on becoming pregnant are very adversely affected by night work apart from any degree of heaviness. Long before pregnancy is obvious to outsiders, and even to themselves, they begin to complain bitterly of the fatigue of night work. For this reason the aim of the scheme is to place expectant mothers on day work only as a routine at the end of the fourth month of pregnancy, and sooner than this date if there is a complaint of great discomfort due to night work.

As soon as these women notify their pregnancy, even though they have not reached the end of the fourth month, an attempt is made to give them light work within the factory while still working night and day shifts. They are removed from any process which involves heavy lifting or sudden strain. The operating of a capstan lathe involves the tightening and loosening of the chuck, which in many cases requires great physical effort to move it. For this reason pregnant women are taken off lathe work as soon as possible after notification. Some automatic machines, electric crane driving, and some labouring inspection processes involve no such straining and are quite suitable employments for women in the early months of pregnancy.

On reaching the end of the fourth month of gestation, or earlier if there is any medical reason, these women are transferred to light sedentary work at a factory engaged in the gauging and assembling of fuse parts. They work from 7.30 a.m. till 5.30 p.m., with the usual factory breaks for meals. They are given the less skilled operations in this factory, as it is not worth while devoting much time to teaching them any work at which they will be employed only a few months. They are paid at the ordinary standard rate for their work, and the only difference in their treatment from the other employees is that they remain constantly on day work instead of being on night shift on alternate weeks.

At the end of the seventh month, or earlier if there is any medical reason, these women are transferred from the fuse factory to a department which for convenience is described as the general clothing store and sewing dépôt. Here they work from 9 a.m. till 5 p.m., with breaks for meals as in the factory. They are engaged upon the making and mending of overalls, caps, trouser suits, gloves, etc., supplied by the factory management for the use of their workers. The last hour of the day is given up to the making of clothes for the baby under the help and guidance of the sewing dépôt forewoman. The sewing is carried out by hand or with the help of hand sewing machines and the pressing with a gas iron.

The sewing dépôt consists of a forewoman's office, a dining-room, cutting out room, storeroom, workroom, lavatory, cloakroom, and rest room. The women have low tables specially made for their work, comfortable chairs, and footstools for the workroom. They are encouraged to lie down in the rest room during part of their dinner hour, and at any other time if they are temporarily indisposed. They are paid while at this work at the rate of 7d. an hour, which equals 22s. 2d. a week, and, in addition, are supplied with half a pint of milk in the middle of the morning and a two-course dinner from the canteen every day as a free gift from the management.

The medical officer sees any woman scheduled under this scheme at any time if this is necessary for any special reason, and visits the sewing dépôt regularly once a week. At this weekly visit she takes a general survey of the health of the women, examines a specimen of urine from each for the presence of albumin, and gives advice to any special case that is in need of it.

The women make their own arrangements for attendance during confinement. They may remain at work until labour begins, if they wish to do so; one woman has been sent home half through the first stage of labour protesting that she would like to stay and have her dinner before leaving.

Since this scheme has been in actual working order one or two points have impressed themselves very much upon our notice. The early notification of pregnancy is entirely a new phenomenon since the workers have come to know that their condition will not lead to the loss of their employment, and the number of applicants for enrolment exceeds greatly the expected number as calculated from the numbers leaving the factory on account of pregnancy previous to the starting of this scheme. This second result is due to two causes: First, there is no object in concealment, as unmarried girls with their first pregnancy are equally cared for with the married women; and, secondly, there seems less anxiety on the part of the married workers to terminate a pregnancy in the early months before its existence can be suspected by any one but themselves. Before this scheme began its operations pregnancy was looked upon as a calamity to be avoided by all possible means, as it inevitably prevented the continuation at work when it became obvious to the factory authorities.

The women working under this scheme appear entirely contented with the conditions of their work and the pay they receive; the only anxiety they show is that they shall be able to find employment somewhere in the factory after their children are born.

At the present time it is too early to make any dogmatic statement about the condition of the children born of these mothers, but even now the general well-being of the mothers is very apparent. Though the period since its opening is so short, the accommodation for applicants has been found to be too small, and it has become necessary to consider the establishment of a much larger workroom. As this workroom is the only one of its kind in the country, the management has already been approached by other factories to admit expectant mothers from outside to its workroom, but naturally without large extension this is impossible.

It seems highly desirable that these mothers shall not be separated from their children when they return to work, so that it is hoped in the near future to establish a post-maternity department, with work for the mothers and a nursery for the children, where they may be breast-fed at suitable intervals.

This whole scheme, which is still in the experimental stage, has been worked out on the assumption that it is no charity, but rather sound business, for a large factory to care for its workers who are expectant mothers, and up to the present this assumption has proved true. The women fully earn their wages, and the factory has the benefit of their work. They themselves are healthy, and it is our confident expectation that in due course the children will show the results of the care bestowed upon their mothers before they were born.

NOTES ON THREE FATAL CASES OF B. AERTRYCKE INFECTION.

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MORE or less severe outbreaks of diarrhoea and of gastro-enteritis are common among soldiers in camps, but it is not often that the infecting agent can be found and identified. The three fatal cases of acute gastro-enteritis we are about to describe were admitted to hospital from a large convalescent dépôt near by, in which several hundred other (but milder) cases of the same disorder occurred. The very complete investigations of Captain Perry, R.A.M.C., and Captain Tidy, R.A.M.C.(T.), have proved that the infecting agent in these milder cases was, as in our three patients, *B. aertrycke*.

CASE I.

Pte. D. H., aged 27. Admitted April 17th in a state of collapse; grey in colour with sunken eyes, cold extremities, no pulse at the wrist, weak heart sounds (rate 130), temperature 95° F. Stated that he had had continual diarrhoea and vomiting with much abdominal pain since April 13th. During the day the patient took nothing but cold water, vomiting without effort yellowish-green mucous fluid, and passing several greenish pea-soup-like stools containing no solid particles or blood. In the evening he became unconscious, with infrequent shallow respiration, but was much improved by the intravenous infusion of three pints of 6 per cent. gum acacia solution combined with 1½ drachms of sodium bicarbonate.

April 18th. Temperature 96.4° F., pulse 150. Extremities cold; abdomen retracted, tender, rather rigid, spleen not palpable, borborygmi. Diarrhoea and vomiting continue uncontrolled by morphine given under the skin.

April 19th. Temperature 97.2° F. last night, 95.8° F. this morning; pulse 92. Patient has vomited ten times and had his bowels open thrice in the last twenty-four hours, thin yellow-green fluid in each instance. He prefers cold water to all other forms of fluid offered him; and complains much of abdominal pain, unrelieved by hot applications.

April 20th. Temperature 96.8° F. last night, 96.0° F. this morning. Patient is weaker, lies with his eyes half open. The diarrhoea and vomiting continue unrelieved by morphine hypodermically or Dover's powder by the mouth. Abdomen retracted, soft, tender. Fluids taken badly.