Current Literature.


The author, a Major in the Medical Corps of the Czechoslovakian Army, analyses the statistics for suicide in the army to which he belongs, in other armies and in the Czechoslovak civil population.

During the period 1921-22 to 1932-33 the suicide rate in the Czechoslovak Army averaged 0-83 per 1,000 of strength per annum and accounted for one-third of the total deaths. In the year 1928-29 the suicide rate was 1.03 per 1,000 but by 1930-31 had fallen to 0.68 per 1,000; it rose again, however, until in 1932-33 it reached 0.94 per 1,000.

The reasons for the heavy losses from this cause are divided into two groups; the first includes all suicides in which the conditions of military service appeared to play no part, e.g. family troubles, sexual difficulties and constitutional mental instability; this group accounts for 72.9 per cent. of the total. In the second group under the heading of military causes are considered those cases which resulted from fright, excitement or shame following the infliction of legal or disciplinary punishments.

There is a seasonal increase in suicide, the number of cases being highest in January and most of them have taken place on Monday evenings.

The proportion of suicides is much smaller among farmhands than among factory workers or artisans.

Firearms were used in some 80 per cent. of the cases, and the arm of the Service to which a soldier belongs seems to have no apparent influence in the incidence of cases nor in the methods adopted.

Statistics from other sources show that the German and Czechoslovak armies have a higher proportion of suicides than other armies, the rate for the former being 0.94 per 1,000 and 0.83 for the latter.

In the British, Italian, Belgian, and in later years in the French Army, the rates are much lower, the average for our own army being 0.17 per 1,000 of strength per annum.

Civilian statistics are incomplete and inexact, but so far as can be ascertained the rate for suicides in the Czechoslovak Army is 1.7 times higher than the corresponding rate for the civil population. A similar difference is found in other countries.

Amongst other influences on the incidence of this cause of death the author emphasizes the importance of school and family life and the unemployment which has resulted from the industrial crisis.

A study of the mental states in suicides shows that 50 per cent. are psychoneuropaths, and this is in agreement with the Fribourg-Blanc division of this class into groups of mentally or physically diseased.
In the Czechoslovak Army steps are taken to lessen the losses from suicide by the issue of instructions for its prevention by unit commanders and by the thorough investigation of all suicides or attempts to commit suicide.


The author quotes Haughwout and Callender who have already emphasized the assistance offered by the cytology of the exudate in guiding the treatment and determining the cure of amoebic dysentery.

Cases treated by emetine, the arsenicals and the quinoline compounds are described, the effects of the drugs in each case being carefully weighed.

Although the observations are few it is considered that in cases where the exudate gives warning by the presence of unchanged leucocytes or bacteria of secondary infection then emetine is the drug of choice for the initial treatment, although it should not be administered, at least in large doses, to patients suffering from fever and toxæmia following on a secondary infection for fear of the occurrence of nerve degeneration.

In the absence of secondary infections or after these have cleared under emetine treatment, the arsenical preparations give good results.

**NAPIER. The Transmission of Kala-Azar in India.** *The Indian Medical Gazette*, 1935, v. 70, No. 5.

In this paper, read at the 1934 Congress of the Far Eastern Association of Tropical Medicine at Nanking, Dr. Napier begins by discussing the anatomical distribution of the causative organism in Chinese and Indian cases of kala-azar.

In China the parasite has been found by various observers to be more common in lymphatic glands, and in the skin during the visceral stages, and also more frequently as submucous infections of the intestinal tract than in Indian cases.

During the first six months of their investigations into the transmission problem the Indian Kala-Azar Commission devoted their energies to exploring the possibilities of direct transmission until the work of the Calcutta School directed attention to the sandfly.

The Calcutta investigators also spent much time on the examination of urine, faeces, sputum and nasal mucus, but with consistently negative results. Shortt, working for the Commission, obtained a positive culture from the urine of a kala-azar patient, but Napier and Das Gupta showed that no growth could be obtained if the urine was free from albumin. Leishmania bodies were also found in the dysenteric stools of kala-azar patients and more recently in a nasal smear from a case of dermal leishmaniasis.

Napier considers that although such findings demonstrate that the parasite can leave the body by such means they do not constitute any
regular channel of escape. The possibility of direct transmission has, however, not been lost sight of.

The discovery of the development of *L. donovani* in the sandfly was the result of a definite line of investigation decided on after consideration of the prevailing conditions in a focus of intense infection in Calcutta. A survey of the arthropoda of this area was carried out and as monsoon conditions developed, *Phlebotomus argentipes* appeared in large numbers. Laboratory breeding of these flies was then started and within a few months the development of leishmania into its flagellate stage was demonstrated. This was followed by the evidence that the flagellate stage ultimately reached the mouth parts of the insect and could infect the wound when the sandfly was having a blood-meal. So far, in spite of successful animal experiments, the investigators have failed to transmit the disease to man by this means.

The points in favour of the sandfly hypothesis are then considered, the better-known arguments being followed by the statement that the majority of clinically cured cases of kala-azar provide a continuous source of infection whether they show dermal lesions or not.

From the consideration of the distribution of these dermal lesions it is apparent that the parasites spread by means of the blood, but as in the dermal phase they are not found in the blood-stream the distribution must take place while the visceral disease is in progress. It has been previously suggested by the author that many dermal infections show no clinical evidence and that although it may be difficult to demonstrate skin infections in such cases by histological methods sandflies may become infected from them.

Laboratory and epidemiological investigations in India all point to *Phlebotomus argentipes* as the normal transmitter.

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The study reported in this paper is an attempt to express the conditions of ventilation in schools in terms of the effective temperature.

The tests were carried out with groups of twenty-five healthy school children and with a smaller group of adults as a control; the results are based on the replies of each individual undergoing the test to queries as to the degree of comfort experienced under variable conditions which were provided in a room equipped with a modern air-conditioning apparatus.

Votes were taken for each effective temperature when it was approached from below and from above and it is clearly shown that in summer in Ontario the maximum degree of comfort is experienced at an effective temperature of 70.5°, the comfort zone being between 66° and 75°.

In winter the comfort zone extends from 57° to 73° effective temperature.
and the comfort line is at 66·5° E.T., the comfort line being the same for girls and boys as well as for the adult controls.

The dry katathermometer at the maximal degree of comfort gave a reading between 4·5 and 5·5.

An effective temperature of 66° is equivalent to a dry bulb reading of 72° with an air movement of twenty to forty feet per minute and a relative humidity of 30 per cent.

It is suggested that ventilation standards for school rooms should require the maintenance of 70·5° E.T. in summer and 66·5° E.T. when the rooms are artificially heated.


The first part of this article deals with the ticks found infesting rodents and their nests in Kenya and the possibility of their acting as vectors of disease among rodents or from rodents to man.

The possibility of a tick vector being responsible for the immunity from plague shown by field rodents was also investigated with negative results.

In the second part a record is given of the investigations leading to the discovery that Rhipicephalus sanguineus is the vector of tropical typhus in this part of Africa.

From a study of the arthropods of the area it was concluded that the possible vector would be R. pulchellus, the tick there found most commonly on man. Experiments with this have so far, however, proved negative, although there is some suggestion that a disease of a milder type than that usually recognized as tropical typhus may be spread by this agency.

R. sanguineus prevails in houses in Mombasa in the cold weather and in other areas has invariably been found in houses where cases have occurred.

The inoculation of emulsions of this tick into male guinea-pigs has given rise to a syndrome similar to that obtained by Tonking with material from primary lesions in man. Positive results were also obtained with ticks taken from dogs in the Naivasha district and from the walls of a house in Nairobi.

The seasonal variation in numbers of R. sanguineus also appears to have a definite relation to the periodical increase of tropical typhus cases in townships.

Preliminary observations indicate that periods of heavy rainfall and cold cause unfed R. sanguineus in all stages to wander in search of a host and shelter; this may lead them to attack man in the absence of their regular host, the dog. These observations seem to account for the fact that the disease appears most frequently at the end of or just after the rains.
As a result of this investigation a definite attack has been made on the
ticks in the quarters of the Kenya Uganda Railway staff, disinfestation
leading to a considerable reduction in the incidence of tropical typhus
among the personnel. The measures adopted are much the same as those
used against bugs in this country.

Butterfield. \textit{A Zoogloea-forming Bacterium Isolated from Activated

This interesting article marks a further stage in the studies of sewage
purification being carried out by the United States Public Health Service.

Each time an activated sludge has been developed either in the labora-
tory or in an actual working plant the floc formed has contained zoogloean
masses which were most numerous when the process was working most
efficiently.

After many trials it was found possible to purify clumps of the zoogloea-
forming organism by picking up a selected formation in a sterile pipette
and transferring it to a series of dilution waters containing 10 per cent of
sterile nutrient broth. After 10 to 12 changes the mass became clear of
extraneous matter and was then transferred to normal dilution water and
changes continued until dispersion of the organisms occurred, when
inoculations were made on agar plates and lactose broth. No results were
obtained from the agar plates but growths were found in all the lactose
broth tubes.

The organism is rod shaped, 2 to 4 \( \mu \) in length and about 1.5 \( \mu \) in
diameter, and tends to grow as a floc in liquid media. Outside such flocs
it occurs singly or in pairs. It possesses a thick capsular wall and has
a single polar flagellum. Spores are not formed and the organism is Gram
negative.

Scanty growth is obtained on special sludge agar or on nutrient agar
containing 10 per cent of ascites fluid. It grows well in nutrient broths
containing peptone at both 20° F. and 37° F., the broths becoming more
alkaline as the growth progresses. It also grows luxuriantly in sterilized
sewage increasing the alkalinity until a pH of 8.6 to 8.8 is reached.

The optimum pH appears to be about 7.0 to 7.4.

Indole is not produced in either peptone or tryptophane broth. The
organism is a strict aerobe although when subjected to anaerobic conditions
for seven days it was not killed.

Good growth was obtained in a variety of sugar media without gas
formation and without apparent acid formation although the latter may
possibly have been obscured by the alkaline by-products of growth.

Experiments with this organism in synthetic media and sterilized
sewage show that the activated sludge formed by it is a potent factor
in the removal of oxidizable organic matter from solution. In sterilized
sewage after three hours' aeration an average of 68 per cent of the
oxidizable matter had been removed.
Reviews

Tests with this organism in association with a protozoal culture, Colpidium, showed that the addition of the protozoon only slightly increased the amount of oxidizable matter removed but left a much clearer supernatant fluid.

No material changes in the amounts of nitrites or nitrates were observed during these experiments and it would appear that no oxidization of ammonia results from the action of this organism which has been tentatively identified as Zoogloeae ramigera previously described by Kruse and other writers.

Control tests with Bact. aerogenes showed that no oxidizable matter was removed by it, the oxygen demand apparently not being affected.

A very useful list of references is given.

Reviews.


We have read this book with great interest. We find in its pages for the first time a full description of the new (1928) Field Medical Organization of the American Army. The book contains a great deal more than just a description of this new organization but it is perhaps with this that we are chiefly interested. Naturally we compare it with our own organization and would so judge it. The first thing that strikes us is the scale on which qualified medical men are provided for the front areas. Numerically an American Division is much the same as a British one, yet they consider it necessary to have nearly twice as many medical officers in the Division as we do. We also notice that a number of specialist officers are attached to the Division Surgeon’s office (A.D.M.S.’s office), viz. a medical inspector, an orthopedist, a urologist, a chemical warfare officer, a neuro-psychiatrist and a director of laboratory service—a goodly list. We call to mind the fact that in August of 1917 a commission of eminent members of our civil medical profession came out to France on a tour of inquiry because it was thought by some at home that we had too many qualified medical men employed in forward areas—perhaps the findings of this commission exonerated our D.G. in this matter, but it is interesting to see that the American General Staff evidently consider that we have not enough. The American medical divisional organization seems to us to be very complete. Regimental medical detachments are provided on a liberal scale for all. The most important unit is the Medical Regiment, which is not an attached unit but a fixed integral part of the Division. It is commanded by a Colonel of the Medical Corps who also functions as Division Surgeon and in this capacity as a divisional staff officer—the medical adviser of the divisional commander. The Medical Regiment
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